The hidden costs of automotive commodities procured from the People's Republic of China.

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Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature:…….. Date:……

Executive summary

Globalization has shifted to a level where market competition is tougher. Therefore, multinational companies focus on cutting cost along the company's supply chain with heavy scrutiny on procurement. Developing countries have become very attractive from which to strategically procure commodities because of low cost labour, especially from the People's Republic of China. The business complexity, ethics and current market situation in China are often too modestly emphasized. Yet, these elements have a significant impact on the sourcing decision because it indirectly influences the total landed cost of a commodity but is not taken into account. Therefore, the total landed cost on which sourcing decisions are made, does not reflect the actual total landed cost of a commodity. In many cases multinational companies sourcing from China do not realise the impact of the hidden cost involved and do not reach the expected cost savings as calculated.

The purpose of this study is to explore why more attention must be paid to hidden cost when automotive commodities are procured from China. This, as well as the research methodology used in order to obtain the data, is explained in chapter one. Chapter two of this thesis illustrates the change in a company's supply chain and discusses this in a global sourcing context. The sourcing commodity, which is the point of focus in this study, is automotive commodities sourced from China and is discussed in chapter three. Based on China's increased presence in global sourcing of automotive commodities, chapter four focuses on China's integration into the global supply chain. The influential factors that have an impact (hidden cost) on the actual landed cost of commodities sourced from China are described in chapter five and identified as guanxi, indirect business logistic obstacles, quality of goods and supply, management, the labour market and training, and Intellectual Property Rights (IPR). In chapter six the influential factors, as described in chapter five, are analysed through a case study of Daimler Chrysler China Limited. Chapter seven is a comparative study of Japan's miracle economy from 1960-1980 and the current economic trends in China to determine whether it will be feasible to procure automotive commodities from China in the future with regards to the economic indicators.

Opsomming

Globalisering het verskuif na ’n vlak waar mark kompetisie meer gekonsentreerd is. Daarom fokus multinasionale maatskappye ernstig daarop om kostes langs die aanvoerketting van die maatskappy te verminder deur te konsentreer op die aanskaffingsproses. Ontwikkelende lande het uiters aanloklik geword as bestemming in die strategiese aanskaffingsproses van goedere weens lae arbeidskoste, veral vanaf Sjina. Tans word die besigheidskompleksiteit, etiek en die markkondisie in Sjina meestal onderbeklemtoon. Daarenteen het die faktore ‘n gewigtige impak op die aanskaffingsbesluit omdat dit die totale koste by aankoms indirek beïnvloed. Gevolglik reflekteer die totale koste by aankoms, waarop aanskaffigsbesluite gegrond word, nie die werklike koste van aankoms van goedere nie. In menige gevalle behaal multinasionale maatskappye nie die verwagte kostebesparing soos bereken vir goedere wat vanaf Sjina aangeskaf word nie omdat die multinasionale maatskappye onbewus is van die impak wat die versteekte koste op die totale koste by aankoms het.

Die doel van hierdie studie is ‘n ondersoek na die redes waarom daar meer beklemtoning moet wees op versteekte koste wanneer goedere uit Sjina aangeskaf word. Dit, sowel as die navorsingmetodes wat gebruik is om die inligting vir die studie in te win en akkuraat deur te gee, word verduidelik in hoofstuk een. Hoofstuk twee bespreek die verandering in 'n maatskappy se aanvoerketting in ’n globale aanskaffingskonteks. Hoofstuk drie fokus op redes vir Sjina se toenemende verteenwoordige rol in die globale aanskaffing van goedere en op die aanskaffing van motorvoertuigparte uit Sjina. Met betrekking tot die globale aanskaffing van goedere word die integrasie van Sjina in die globale aanskaffingsketting in hoofstuk vier bespreek. Die beïnvloedende faktore wat 'n impak (versteekte koste) op die werklike koste by aankoms van die motorvoertuigparte wat aangeskaf word vanaf Sjina het, word bespreek in hoofstuk vyf en geïdentifiseer as guanxi, indirekte besigheidslogistiek hindernisse, die kwaliteit van goedere en die aanskaffing daarvan, bestuur in Sjina, die Sjinese arbeidsmark en opleiding in die werksplek, en intellektuele eiendomsreg. In hoofstuk ses word die beïnvloedende faktore (soos bespreek in hoofstuk vyf) geanaliseer deur ’n gevalle studie van Daimler Chrysler Sjina Beperk. Hoofstuk sewe is ’n vergelykende studie tussen Japan se wonder ekonomie van 1960-1980 en die huidige ekonomiese tendens in Sjina om te bepaal hetsy dit moontlik sal wees om motorvoertuigparte aan te skaf vanaf Sjina in die toekoms met betrekking tot die ekonomiese indikatore.

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List of abbreviations

AM/FM	Amplitude Modulation / Frequency Modulation
ASDB	Asian Supplier Database
BU	Business Unit
CGCSL	Chrysler Group China Sales Limited
CNY	Yuan (Republic of China's currency) {the exchange rate from 01-21-2008 of 1 USD = 7.241 CNY will be used throughout this thesis. Source: www.xe.com}
DC	Daimler Chrysler
DCCL	Daimler Chrysler China Limited
DDP	Duty Delivery Paid
EBS	European Business School
EMO	Emerging Market Office
EU	European Union
FDI	Foreign Direct Investment
FOB	Free on Board
GDP	Gross Domestic Product
GPSIS	Global Procurement and Supply Information System
GP&S	Global Procurement and Supply
G8 Summit	Group of Eight (international forum for governments of countries that represent 65% of the world economy)
IPR	Intellectual Property Rights
JIT	Just in Time
MBCL	Mercedes-Benz China Limited
NEA	North East Asia
PO	Purchase Order
RFQ	Request for Quotation
R&D	Research and Development
SWOT	Strength, Weakness, Opportunities and Thread's analysis
TRIPS	Trade Related aspects of Intellectual Property Rights
USA	United States of America
USD	United States Dollar ($), {the exchange rate from 01-21-2008 of 1 USD = 7.241 CNY will be used throughout this thesis. Source: www.xe.com}
VW	Volkswagen
WTO	World Trade
3PL	Third Party Logistics

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1. Introduction

This chapter summarizes the aim, objective and goal of the topic and the research methodology used. Global sourcing is rapidly becoming the key initiative organizations employ to reduce total costs and is seen as a compelling value proposition providing a strategic lever for organizations.[1] Western companies are rushing to low-cost countries like China to either fill gaps or strengthen links across their supply chains. One particular part of their operations, namely procurement, deserves special scrutiny to suppress cost. Purchased material is generally the largest line item of the total cost in finished goods with a 40-70% weight.[2]

Most western companies that source from China do not realize the impact of hidden cost, which evolve in the course of doing business with China, and, therefore, their expected cost savings lead to a cost catastrophe. Hidden cost refers to cost that has a significant impact on the final product but not calculated into the total landed cost of that particular product.

The aim of this thesis is to increase awareness that sourcing from China is very difficult and not always the best option. The scope of the thesis emphasizes the importance of understanding the hidden costs involved when sourcing from China. The goal is to prove, through a case study of Daimler Chrysler China Limited (DCCL), that sourcing automotive commodities from China is difficult and that expected cost savings are rarely reached when the hidden costs are taken into account.

In addition to the core focus of the thesis, the similarities between Japan's economic growth and trading activities in the 1950-1980s, and China's economic circumstances and trade today, are analysed and compared to create an understanding of the sourcing opportunities and the degree of volatility in the Chinese market.

[1] Cf. Accenture, (2005)

[2] Cf. Kehal H, Singh P.V, (2006)

1.1. Research Methodology

The thesis is divided into two sections, namely the literature review and a case study.

1.1.1. The Literature Review

Research of mainly a qualitative nature contributes to the literature review section. An empirical primary data approach, as well as a secondary data approach, are used to obtain optimal results that are accurate and relevant.

The goal of the literature review is to support the case study from a descriptive nature but also indirectly from an academic point of view through theory.

1.1.2. The Case Study

The unit of analysis is Daimler Chrysler China Limited (DCCL) and automotive commodities in particular. Data for analysis was gathered from several historic reports and compiled by means of analytical calculations and interpretation supported by information from interviews with general management and relevant team members as well as practical experience in procurement in DCCL from December 2006 to June 2007.

To reserve confidentiality, the results of data analysis have been aggregated unless otherwise expressly stated. Analysis done is accurate but has been manipulated in order to comply with the confidentiality agreement.

2. Global Sourcing in the Supply Chain

Global Sourcing is when the service provider (supplier) and the client (buyer) are located in different countries.[3] The transformation of a company's supply chain when sourcing goods and services from a supplier in a different country are discussed in this chapter.

Sourcing has been a reality since the industrial revolution. Adam Smith, a pioneer economist, states that each country or company should focus on their core competences, hence, producing a surplus in that core competency good or service to be exported, and importing goods or services where there is a deficit/scarcity of resources and competencies.[4]

Within the context of global sourcing, there are some minor changes to the supply chain. A supply chain is the middle-ground between the markets and the hierarchies where there are a lot of actors involved in the transformation of raw material into distributed goods. Ideally a supply chain captures value aspects that contribute to the final goods or service (therefore, it is sometimes referred to as a value chain instead of supply chain) and avoid risks.[5]

Figure 2 illustrates the linkage between a supplier and buyer's sourcing supply chain while assuming that there are no other tier suppliers involved:
Firstly, the supplier receives its raw materials or intermediate goods which are then converted into a final product for the supplier's production, who either ships it to the buyer or the buyer takes responsibility to obtain these goods himself. In figure 2 the supplier's supply chain does not have a bracket for sales and marketing because it is an illustration from a buyer's point of view and the supplier does not need to do any marketing since the buyer and the supplier have a signed agreement about the goods to be delivered. Secondly, the buyer converts these goods he has received from the supplier into a final product and ships

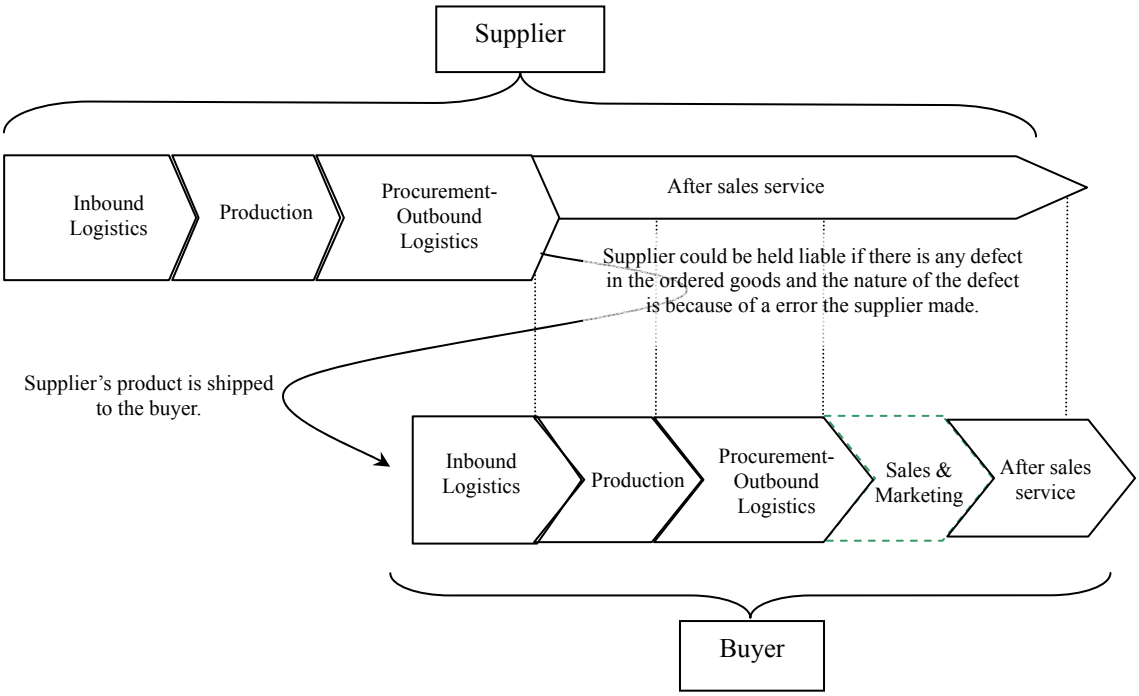
[3] Cf. Kehal H, Singh P.V, (2006)

[4] Cf. Cho D, Moon H, (2002)

[5] Cf. Handfield R. B, Nichols Jr. E. L,(2002)

the final product to the relevant parties and places, for example, dealers, warehouses or outlets. Thirdly, through marketing and promotions, the final product enters the market for consumption. Although the buyer is the key player in the production of the final product, the supplier can still be held liable: (a) if the supplier is responsible for delivering the goods to the buyer and there is any defect or damage to the product in the outbound logistics phase or any deficiency in the delivery time and quality; (b) throughout the production process where the goods are assembled or when the buyer discovers defects in the supplier's goods; (c) if the final product has been sold and a complaint is filed of such a nature that the origin is linked with the supplier's goods.[6]

Figure 2. A global sourcing supply chain.



Source: [6]

The global sourcing product of this thesis is automotive commodities and defined in chapter three.

[6] Cf. van Weele A.J, (2002)

3. Definition of Commodities

Chapter three defines automotive commodities and also the types of commodities that are the focus of the thesis. Karl Marx defined a commodity as a product that has intrinsic, exchange and monetary value.[7] Commodities are not final products that are ready for the end market. They are goods that are either used in the production process to produce other goods or it is a part of a final product, such as a vehicle.

Automotive Commodities

Automotive commodities will be the focal point of this thesis. These commodities are all directly linked to car manufacturing and broken into five main areas:

Chassis: "The rectangular, usually steel frame, supported on springs and attached to the axles, that holds the body and motor of an automotive vehicle."[8]

- Such as: Wheels coil spring, vacuum pipe, fuel hose, wheel carrier and, so forth.

Electrical: "Of or related to sound created or altered by an electrical or electronic device." [9]

- Such as: Antennas, switch, AM/FM coax cable, and so forth.

Exterior: "A part or a surface that is outside" [9]

- Such as: Tow hook, side lamp, weather strip, handles, and so forth.

Interior: "Of, relation to, or located on the inside; inner." [9]

- Such as: Door handle, floor mat kit, smoker's kit, marker lamp, and so forth.

Powertrain: "mechanism that transmits engine power: the portion of a vehicle's drive mechanism that transmit power from the engine to the wheels,

[7] Cf. Marx

[8] Cf. Dictionary of the English language 2003:4th edition

tracks or propellers."[9]

- Such as: Bearings, bracket mount, plate dash, camshaft, valve, oil pump, and so forth.

In order to analyse the sourcing activities of automotive commodities from China it is necessary to focus on China's integration into the global supply chain as discussed in chapter four.

[9] Cf. World English dictionary 2007:North American edition

4. China's Past and Current Situation

Chapter four describes China's integration into globalization. A brief history of China's political reforms are provided, after which their current situation with relation to the economy and trade regulations are discussed.

4.1. History of Political Reforms

China experienced a rapid change after the death of Mao Zedong in 1976.[10] Deng Xiao Ping, the subsequent ruler, nurtured a policy of reform and liberalization. This, in turn, established relations with the United States of America (USA) as well as other Western countries through international investments and other market related initiatives.[11] However, due to slow progress Deng launched a campaign in 1992 for faster capitalist-style reform and the country responded eagerly which led to high economic growth rates ever since.[6]

4.2. Current Situation and Economic Transformation

China's Gross Domestic Product (GDP) growth rate for 2006 was 10.5%, among the highest in the world, with exports and foreign direct investments as main drivers.[12] High and rapid economic growth has several consequences in general, it reduces unemployment, it raises employees' incomes and reduces poverty. However, it has a negative impact on inflation (China's current inflation rate is 2%) and, therefore, has an adverse effect on the balance of payments.[11]

China's economy is also labelled as "overheating" because of massive amounts of investments, strong trade and current account surplus. Economists argue that the challenge is to reduce investment levels

[10] Cf. Chang J,(2006)

[11] Cf. Bordo, (2002)

[12] Cf. Sun Y, (2007)

and, at the same time, boost consumer confidence, consumption and employment levels. This might be easier in theory than in practice since the Chinese population has the tendency to save 20% of their disposable income, which is the highest savings rate in Asia. As a result, when taking the cultural customs into consideration the liquidity will only improve if the Yuan (national currency of the People's Republic of China) appreciate or if domestic consumption becomes the main growth engine.[13]

In terms of geographical distribution within China, the economic boom only shows significant changes in the east-coast regions, where living standards improve rapidly, with rural areas remaining unchanged and/or becoming worse. In table 4.2. the disparity of FDI, GDP, export and population is shown by region for the year 2005. The GDP in the eastern region in China is more than double the GDP in the central region, and more than five times higher than the western region. The most FDI and export activities are in the east with almost nothing in the west. Although the GDP, FDI and export figures are very high in the east, the population difference between the east and the central part in China only differs by 6.6%.[14]

Table 4.2. The regional disparity in China.

Region in China	GDP	FDI	Export	Population
East	61.6%	86.9%	92.6%	42.8%
Central	26.6%	11.2%	4.8%	36.2%
West	11.7%	1.8%	2.6%	21%

Source : [14]

Two significant aspects, namely the monetary and fiscal policies, indirectly drive a county's GDP.[13] China's monetary situation enjoys a persistent low real interest rate together with retained earnings that contribute to high liquidity (as a result the government raised the bank reserves ratios twice in 2006). However, if the federal interest rate increases, the Chinese banks have to increase their interest rates which results in a more favourable investment environment for both foreigners and locals. Regarding the fiscal policy of the Chinese economy, the government has practiced an expansionary policy for the

[13] CF. Bordo, (2002)

[14] Cf. Zheng Y, Chen M

last seven years, but, unfortunately, it is not emphasised enough. Within these seven years the government increased governmental expenditure by investing more money in the Chinese community in order to reduce poverty, unemployment and increase social circumstances. Taking into account the rapid growth in the economy and the past tribulations in social structure, it is necessary to address governmental expenditure more seriously, and act aggressively.[15]

4.3. China's Part in Global Trading Development

China's participation in globalization has grown over the past fifty years and can be seen in the export and import figures illustrated in table 4.3.1 and table 4.3.2.

In table 4.3.1 it is illustrated that China's world export activities grew from 0.9% in 1948 to 7.5% in 2005. In contrast, South Africa, also classified as a developing country, has experience a decrease in its export activities with 1.5% from 1948 to 2005. China has moved from the second smallest exporting country in 1948 (out of 50 countries) to the third largest one in 2005.[16]

Table 4.3.1. Global export activities.

World Merchandise Export		1948	1983	2005
Total global amount in billions (USD)		58.0	1838.0	10159.0
Ranking in 2005	**Country**	**Percentage of total global export**		
1	Germany	1.4%	9.2%	9.5%
2	USA	21.7%	11.2%	8.9%
3	China	0.9%	1.2%	7.5%
24	South Africa	2.0%	1.0%	0.5%

Table 4.3.2 indicates that the import activities of China increased by almost the same proportion as its exports, from 1% in 1948 to 6.3% in 2005. China has moved from the smallest importing country in 1948 (out of 50 countries) to the third largest in 2005.[16] South Africa's import situation is also similar

[15] Cf. Urquhart T, (2007)

[16] Cf. World trade organization, (2005)

to its export movement because its imports decreased from 2.2% to 0.6%.[17]

Table 4.3.2. Global import activities.

World Merchandise Importer		1948	1983	2005
Total global amount in billions (USD)		66.0	1882	10511
Ranking in 2005	**Country**	**Percentage of total global import**		
1	USA	13%	14.3%	16.5%
2	Germany	2.1%	8.1%	7.4%
3	China	1.0%	1.1%	6.3%
21	South Africa	2.2%	0.8%	0.6%

China's increased liberalization practice over the last few decades is a vital reason for its favourable import and export growth. China became part of the World Trade Organization (WTO) on 11 December 2001 after 15 years of negotiations. China joined the WTO for many reasons but mainly to gain external momentum to overcome their domestic obstacles in order to sustain the rapid economic growth of the late 80s and early 90s and to increase their trade interest. Chinese consumers have benefited from the WTO accession, which has led to greater economic efficiency. Concerns have been raised as to whether China's WTO membership will create a change in Foreign Direct Investment (FDI) and increase competition in the export market that will soon lead to devaluation in the Yuan (CNY).[18]

4.4. China's Anti-dumping Scenario

Dumping occurs when goods are offered in a foreign market at less than the normal price in its home market or less than production cost.[19]

China remains a prime target of anti-dumping cases, and it has increased over the years from 23% in 2004 to 37% in 2006.[20] China has also received the highest number of anti-dumping investigations in 2005 with 57 cases. In comparison, Indonesia (in second position) only had 14 cases. The majority of

[17] Cf. World trade organization, (2005)

[18] Cf. Adhikari R, Yang Y, (2002)

[19] Cf. US Embassy Beijing, (2005)

[20] Cf. Global anti dumping briefing, (2007)

cases reported from China were for textile, electronics, metals, chemicals, and livestock products.[21] To a lesser extent, off-road tyres, windshields, brake rotors and bearings were also among products on which anti-dumping duties were levied. [22]

The impact of anti-dumping regulations for companies sourcing form China is not very encouraging. When an anti-duty levy is placed on commodities, the buyer in the foreign country will not attain the cost saving percentage it calculated because a certain duty amount must be paid in addition to the agreed price. In general, companies in foreign countries sign a service agreement well in advance of delivery with the Chinese supplier. If the duty is levied after the total landed cost of a particular commodity has been agreed to, the cost of the duty levied filters to the buyer. In reality, that particular commodity becomes less cost efficient.

[21] Cf. Peoples Daily Newspaper, (2002)

[22] Cf. Daily Times Newspaper, (2007)

5. Definition of Influential Factors

The influential factors that have a costly impact on commodities sourced from China are defined and discussed in chapter five. Normally, these influential factors are not taken into account and, consequently, the total landed cost does not always reflect the actual cost of sourcing automotive commodities from China.

Michael Beer and Russell A Eisenstat published an article about the silent killers of strategy, implementation and learning. In the article they explain that there are hidden factors which have an unfavourable influence on the outcome of a strategy and learning process, but in most cases people are unaware of the impact of these factors. Therefore, the effect it has on the outcome of a strategy and learning process is only realized once the outcome of the strategy and learning reaches a passive or problematic stage.

The same premise can apply when a multinational company procures commodities through another office in another country, for example, if Daimler Chrysler Stuttgart (Germany) procures automotive commodities from China through Daimler Chrysler in Beijing. In this procuring process there are several costs involved which are carried by the office in the foreign country (for example, the Daimler Chrysler office in Beijing) as well as other costs that have an indirect impact on the total landed cost of a commodity but usually overseen and not taken into account. Therefore, the total landed cost quoted by the supplier in the foreign country (for example, China) does not reflect the actual total landed cost. Some of the influential costs that occur in the procuring process are seen as general business expenses but requires more attention because companies intend to calculate the difference in procuring cost by comparing the total landed cost from a few countries of a particular commodity without taking the influential factors into account. In most cases the impact of the influential factors are realised too late and, in other cases, companies are not even aware of the influential factors and do not understand why their company does not achieve high profits when huge amounts of cost savings are calculated on the

commodity's total landed cost procured from China. The hidden costs do not include the fluctuation in exchange rates, actual logistics cost, fluctuation in Brent Crude oil or any costs that have a direct impact on the automotive commodity's price because these costs are usually analysed when potential sourcing destinations are considered.

Influential Factors

The influential factors that have an impact on the total landed costs of an automotive commodity are identified and described in section 5.1 to 5.6 as; guanxi, indirect business logistics obstacles, the cost of quality in China, management, the Chinese labour market, employee training and intellectual property rights.

5.1. The Importance of Guanxi

Guanxi is defined as a special personal relationship in which long-term mutual benefit is more important than short-term individual gain.[23] It is to the Western company's advantage to have some knowledge of guanxi because it is the baseline of doing business in China. Guanxi facilitates transactions and it is easier to agree on most business arrangements in the presence of guanxi. The theory of guanxi is of utmost importance in China because it is more important who you know, rather than what you know. [24]

Many difficult business scenarios can be solved through a guanxi relationship, but the relationship is associated with a cost.[24]

One can not practice guanxi with everyone. if person or company A wants to develop or establish guanxi with person or company B, the person or company A needs to ask an intermediary to introduce himself to party B.

Maintaining guanxi involves to a monetary expense, time investments, trust, and the constant effort of sustaining it. To invest time is sometimes more important because it can be considered easier to give

[23] Cf. Guangxi J.Z, Bovarnick M, (1986)

[24] Cf. Lenard M.D, (2006)

money than to actually spend time with them by sacrificing free time or by rearranging one's business schedule. Guanxi is an ongoing process and the continuous effort of building and sustaining a guanxi relationship irritates most Westerners. The risk of a failed guanxi relation is possible if the time period needed to develop guanxi between the two parties cease to exist.

5.1.1. Guanxi in a Chinese Culture Perspective

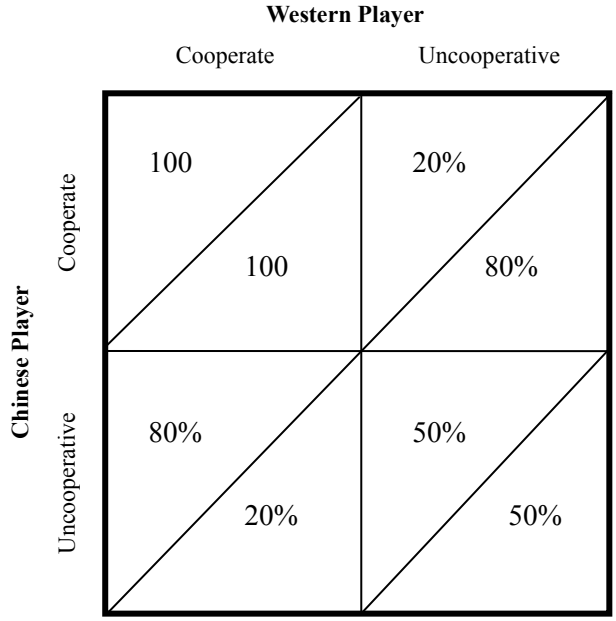
Confucianism can be seen as a cornerstone of the Chinese culture and to the greater philosophy of guanxi. Confucianism is a philosophy based on the writings of K'ung Fu Tzu (commonly know as Confucius) and his ethical teachings stresses humanness towards others, loyalty to the state, generosity, amoung other points, and a big part of his theories are focused on the relationship between people. Further explanation of guanxi can be done by game theory. [25] The mindset is the same as the prisoner's dilemma[26] fillustrated by figure 5.1.1 where there is voluntarily cooperation without any law enforcement.

In figure 5.1.1 there are two parties involved: the western player/company and the Chinese player/company. Both parties' actions and contribution to guanxi can be classified as cooperative or uncooperative. If both parties cooperate they will gain equally, illustrated by the top left quadrant, which is more than what they would have gained had they not had a guanxi relationship. On the contrary, if the parties' cooperation is not equal, their gains will not reach an optimal point and could lead to a break in their guanxi relationship, illustrated by the top right and bottom left quadrant. This differs from the prisoner's dilemma game because both parties will have freedom to communicate. Therefore, various factors, such as trust and honesty, will be necessary and presumably require some effort or money in order to benefit from the gains in the top left quadrant (the optimal point).[26]

[25] Cf. Lun S.Y, Walker A, (2006)

[26] Cf. Smith M.S, (2003)

Figure 5.1.1. The relation between guanxi and the prisoner's dilemma.



Source: [27]

5.1.2. Financial Explanations and Implications of Guanxi

In 1980, Ben-Porath, an Israeli academic, addressed personal ties without any reference to a specific country, culture or economic environment. Although guanxi was not a buzzword in those days, Ben-Porath's work are still useful when discussing the economic impact of guanxi.

He defined the distinctiveness of three types of costs:

- *The cost of establishing a mutual view*: The traits that are very important in this point are honesty, reliability, skills, among others, and if these motions developed to a high degree it could help both parties if they find themselves in a difficult business scenario.
- *The cost of norms and rules*: It must be clear how each party must react to unforeseen events and disagreements in order for both parties to gain future benefit.
- *An expected reduction in exchange:* If both parties work well together to establish a long term guanxi relationship, they might gain more from the relationship through more business deals or smoothing difficult business deals. The chances of one party being less cooperative in terms of

[27] Cf. Smith M.S, (2003)

the guanxi relationship is less likely when the gains both parties receive are high.[28]

Among these costs, one can also assume it entails the cost of sustaining a guanxi relationship. Practical examples of the three costs specified above involve monetary expenses for meetings, social events, presents and favours.

5.1.3. Future of Guanxi

As stated above, guanxi is directly linked with Chinese culture. The future of guanxi will be determined by the present Chinese state and the current factors that have an effect on culture and the degree of demand for more formalism.

The Chinese state today has absolute authority over China. To adjust the Chinese legal system in order to incorporate a lower cost alternative to guanxi, would be costly. Such a change would only be realized if the key players emphasise the situation between themselves. The key players consist out of the leadership from the government, competitors outside China (USA, Russia, et cetera) and the ruling elite within the communist party.[28] The weight of competitors outside China is becoming more and more important because of China's increased global presence. With more global exposure, China is facing pressures and regulations from all the ends of the world (for example WTO, trade barriers and tariffs).

Not only is China experiencing global pressure but the need to change is also felt from within. The citizens of the People's Republic of China do not elect the sovereign hierarchy. Instead, an elite group, consisting of a thousand senior party members occupying key positions in the government, elect governing officials. Concerns are raised by the USA and other foreign countries about the ability of their leadership and the likelihood that such leaders will acquire as much wealth as possible in their ruling period to appear successful while it is unlikely that they will emphasize the diminishing of costs related with guanxi. In many cases, if a policy is changed it might initially have an unfavourable effect as it takes time before the advantages of such a change are visible. In other words, the Chinese ruler who implements a change in policies might be seen as unsuccessful at first because an immediate

[28] Cf. Lu S.Y, Walker, A, (2006), pp42-44

unfavourable outcome might be experienced in the society. Before the fruits of any reform can be picked, there will be some cost and difficulties involved.[29]

5.2. Indirect Business Logistics Obstacles

5.2.1. Definition and Basic Understanding of Logistics

Logistics refers to the activities that provide a bridge between the production phase and market locations where both are separated by time and distance. Logistics consists of many factors, such as transportation, inventory maintenance, order processing, product scheduling, protective packaging, warehousing, materials handling, information maintenance and supply scheduling.[30]

There are five main forms of transportations that are widely used today, namely, road, water, air, rail and pipeline.[31] The latter will be ignored because the focus of this thesis is on automotive commodities which can not be transported via pipeline.

- *Road:* It can be the fastest overland transport mode for short distances, it is a very flexible and reliable form of delivery but not the cheapest option.
- *Water:* In can be the best value for money transport mode for bulk deliveries, but it is limited in locations and not a fast option.
- *Rail:* It can also be a good value for money transport mode in the case of bulk items. Rail transport is less limited to locations than water and relatively fast.
- *Air:* It can be the most flexible and quickest mode of transport but it is certainly the most expensive one.[31]

[29] Cf. Lu S.Y, Walker A, (2006), pp128-135

[30] Cf. Ballou R.H, (2004)

[31] Cf. Bozarth C.C, Robert B, Pp.340-344

Any mode of transportation is directly connected with a logistics strategy and a logistic strategy has three main objectives:

1. *Reduction of total cost* in order to obtain maximum profit by means of minimizing the variable costs.
2. *Capital reduction* by minimizing the level of investment in logistics. The focus is on Just in Time (JIT) supply, avoiding warehousing, using third party logistics providers, et cetera.
3. *Service improvement* of the logistics service provider.[32]

Although numbers one and three can be seen to be in direct conflict because number one focuses on cost reduction while number three implies an improvement in services. The improvements in services generally have a cost involved, such as an upgrade in the technology used or training of staff. In the long run the cost of improving services can be seen as an investment because it is likely that it would have a positive impact on the business in the future.[32] The importance and complexity of logistics increased over the years because globalization grew rapidly, and instead of a short-term view, it has taken on an essential long term strategic mindset.

5.2.2. Most commonly agreed upon Modes of Transportation

In a service agreement it is standard international practice to stipulate the modes of transportation for the freight between a supplier and a buyer. The two most commonly used agreements of freight transportation are Delivered Duty Paid (DDP) and Free on Board (FOB), which are incoterms (globally understood in the logistics industry). DDP refers to the arrangement whereby the seller bears all the costs, duty and risks involved of transporting the goods to wherever the buyer specified. FOB is when the seller delivers the goods at the port of shipment specified by the buyer, and the buyer carries all the cost, risk and duty deriving from thereon.[33]

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[32] Cf. Bozarth C.C, Robert B, Pp.338

[33] Cf. International Chamber of Commerce

5.2.3. China's Logistics Situation

In 1980 and before, there were neither many imports nor market competition in China. The government distributed everything and the means of transportation were also different. Passenger transportation in cities relied mostly on bicycles rather than cars.[34]

The Chinese government is doing a great deal to upgrade the transportation infrastructure inland but this will take some time before any favourable changes in manufacturing cost can be seen. Currently the logistics costs in China accounts for 20% of product prices in comparison with 10% in the USA.[35]

At the recent Council of Supply Chain Management Professionals conference in TianJin, China's urgent action in developing its supply chain was addressed in order to cut logistics costs. The logistics cost in China for 2006 was calculated to be a total of USD (United States dollar) 498 billion, which is 18.3% of their GDP, in comparison with 9.9% in the USA. The executive vice-chairman of the China Federation of Logistics and Purchasing, Ding Junfa, said: "The turnover of third party logistics providers increased at a rate slower than GDP growth last year. The mainland's logistics industry still lags two or three decades behind advanced nations." (Ding 2007)[36] He pointed out that in the four stages of logistics development (traditional warehousing, goods delivery, incorporated logistics and supply chain management), China loiters at the second stage. Deng also mentioned that capital reinvestment into logistics are fifteen times slower than that in the USA and that the multi-layered administration, which the Chinese government nurtures, concludes to a negative impact on logistics cost. FedEx's vice-president, Alan Turley, argues that the insufficient connection between the transportation modes and facilities are among the biggest logistics problems in China.[36]

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[34] Cf. Beron R, (2006)

[35] Cf. U.S. Commercial Service China, (2006)

[36] Cf. Geng, S, (2007)

The five year plan that China announces every five years have been announced in 2006 and addressed several infrastructure improvements. From 2006 to 2010, China's development will entail the following:

- *Railway* - Six passenger railways between major cities will be built, together with five intercity railways in some major cities, and an upgrade of five existing railways.
- *Roads* – Fourteen expressways will be built.
- *Ports* – Transit systems will be implemented at twelve seaports for imported energy goods such as oil, gas and coal, as well as coal transit and storage bases in eastern and southern China.
- *Shipping* – The third phase of the Yangtze River project will be executed.
- *Airport* – Ten airports will expand and two airports (Kunming and Heifei) relocated.[37]

5.2.3.a. Freight Railway in China Today

China is making a grand effort to develop their railway system. While the passenger railway facilities improve and expand, the need of cargo railway facilities is still large. It is said that in the next 20-30 years around 400 million people will migrate from rural China to the big cities. The main reason for this is the vast number of employment opportunities. Mark Millier, director of China Supply Chain organization, stated that passenger trains are the highest priority on the government's agenda (taking the relocation of rural Chinese into account), followed by the transportation of energy goods (such as oil, coal, grain), in order to sustain economic growth. All other freight to be exported, for example automotive commodities, follows thereafter.

Paul French, a consultant from Access Asia, revealed that Chinese railways can only use 30% of its capacity for freight demand while the remaining 70% is dedicated to passenger trains. At present China has the third largest railway structure in the world with 75 000km, (America is first with 230 000km and Russia second with 85 800km). It is forecasted that between the year 2006-2010 this distance will increase by an additional 10 000km and reach a total coverage of 100 000km by the year 2020. These numbers appear impressive but there is scepticism because the expansion is an expensive action and the

[37] Cf. Feng, (2006)

reliability of the expansion is questioned. A key problem that occurs in freight railway is the not in time scheduling. A passenger train from Beijing to Shanghai takes around twelve hours while a freight train takes one week for the exact same distance. An international logistics company, whose representative prefers to remain anonymous, revealed that their main challenges regarding the Chinese railway system are: "no intermodel facilities, lack of tracking, low bridges, extensive delays, misrouting, unreasonable surcharges and no service standards whatsoever." Another anonymous executive said that a lack of security is also a big obstacle.[38]

5.2.3.b. Sea Freight Transportation

Shanghai is China's number one seaport and has been the number one seaport in the world for the past three years. In 2005 the throughput volume of Chinese ports was 4.85 billion tons and an estimated 7.2 billion tons have been predicted for the year 2010. With this increase in volume, comes safety concerns. The throughput of dangerous goods for 2005 was 13% of total freight and this amount has increased by 20% annually. The largest percent of goods leaving Chinese grounds are via sea freight and 80.2% of Chinese GDP constitutes foreign trade. [39]

The efficiency in time, the risk of damage and theft are big problems that occur in sea freight transportation (although the risk of theft is more likely to occur in road and rail transportation). In 2003 it was calculated that Chinese port cranes achieve between 20 to 27 moves per hour in comparison with the 30 moves achieved in Hong Kong. Furthermore, moving freights to and from other transportation modes is very slow. Because of China's communist nature, bureaucracy is still present in many areas and involves a lot of paperwork. Shipping companies must obtain several regulatory authorizations from governmental institutions which prolongs the pre-shipment procedure.[40]

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[38] Cf. Mackey M, (2005)

[39] Cf. Asian Times, (2006)

[40] Cf. USDA Foreign Agricultural Service, (2003)

5.2.3.c. Road Freight Transportation

At the end of 2006, China's arterial highways were ranked second largest in the world with 45,400 km out of 3.48 million km total road coverage. The problems that occur within the road transportation are: high cost (for example high traffic congestion) and toll costs.[41]

China is currently building more toll roads than any other country in the world. A report by the World Bank states that China is using a similar toll rate system as Germany, by asking CNY 0.25 cents per mile for trucks using the toll roads. The annual toll revenue for 2004 was 228 million CNY* (USD 31 487 364), 270 million CNY (USD 37 287 667) in 2005, and approximately 300 million CNY (USD 41 430 742) in 2006.[42] Toll cost has been a vital reason why deliveries are not on time since transportation companies try to bypass toll roads by using additional roads.

Traffic congestion in China is also a big headache for logistics firms. Road vehicles contribute to air pollution which is already a significant problem around the world in terms of global warming. The Traffic Bureau in Beijing stated that the number of cars in Beijing increases by 2000 per day and predict that there are approximately 3 million cars in the city.[43]

In Beijing alone, daily traffic volume has increased by 20% over the last couple of years and the number of vehicles has grown at double the pace as the expansion of highway networks. Speed limits have also been adjusted to reduce traffic congestion resulting in less efficient petrol consumption and, therefore, higher cost per kilometer. And with more cars on the road, the road quality decreases.[44]

Oversized and overloaded trucks are widespread on the roads in China and the low integration between transportation networks are common. Therefore, the logistic companies in China can not gain the synergies of collaboration.[44]

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[41] Cf. Liqun, X

[*] The exchange rate from 01-21-2008 of 1 USD = 7.241 CNY will be used throughout this thesis and see list of abbreviations for further reference. Source: www.xe.com

[42] Cf. World Bank, (2006)

[43] Cf. UBCSala, (2007)

[44] Cf. Lee F.Y, (2006)

5.2.3.d. Airfreight

The airfreight industry in China does not operate to its full potential yet. Firstly, China is not conveniently connected with all parts of the world because of its location. Secondly, as in the case of rail, the focus on passenger transportation is much higher than on freight. Freight aircrafts represent a modest 20% of all aircrafts. The third, and most challenging, factor is the lack of an effective supporting ground network, such as local pickup and delivery services.[45]

In 2005 cargo and postal mail traffic totalled 3,035 million tons, which is 89.2% higher than figures for the year 2000, (with an average annual growth of 13.6%).[46]

5.3. The Cost of Quality in China

5.3.1. The basic understanding of quality

Quality is to reduce the variation around the target but the terms reliability and quality are used simultaneously when talking about the standard of goods and services. Although this thesis focuses on automotive commodities, the common understanding and logic behind quality can be used for all goods and services. It is crucial that the product or service has functional satisfaction over a period of time[47] in order to achieve customer satisfaction and assure ongoing business.

Multinational companies sometimes struggle to reconcile their corporate culture with the culture in the host country (for example Daimler Chrysler): There is a different objective in quality, management and image. The same is valid for countries where one country perceives quality, image and management style differently than another country.

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[45] Cf. Hertzell S, (2001)

[46] Cf. Hongfeng (2006).

[47] Cf. Oakland S.J, (2003)

5.3.2. Quality in China

The degree of inconsistency in quality of products is an ongoing battle in China because the[48] Chinese culture does not nurture a tendency of high quality. Therefore, foreign companies invest a great amount of time and money into the development of Chinese supplier's products, in order to achieve a world class quality. But if the Chinese economy plato and their GDP grow at a slower pace, foreign companies who invest time and money to increase the quality of commodities to be procured from China will face a situation where the gains of their investments are outperformed by the passive growth in the economy and it will be less profitable to procure commodities from China.[49]

During a press conference, on 3 July 2007, a reporter asked Mr. Qin Gang, the Foreign Ministry spokesman, about the quality concerns in China's export market. Mr. Gang emphasized the importance of quality and safety of all products. He pointed out three aspects that were the main reasons for the continuous coverage of the quality and safety issues in China. Firstly, he blamed the media for misinterpretation. Secondly, he blamed the different import and export inspection systems and policies from China and countries that source from China. Thirdly, he said that the actual number of quality problems is limited and that there were only a few business cases that were illegal.[50]

The USA government recalled 450 000 Chinese-made light-truck tyres because of a fatal accident due to a quality defect by the Chinese tire maker, Zhongce Rubber in Hangzhou. This was the second recall within one year. Previously 288 000 passenger-car tyres had been recalled because unauthorized materials were used in the production process which led to air leaks and tread separation. Mr Xu Youming the administrative manager in Hangzhou denied all allegations and commented, "We were getting visas to go to the U.S to discuss the tyre problem related to the incident last year, but now they have blamed us in public. …We do not plan to visit the U.S now." (Xu 2007) The Hangzhou Zhongce company responded to the accusation that the tyres had a shortage of gum strip that helps to hold the

[48] Cf. Guagliano S, (2005)

[49] Cf. Forbes K, (2004)

[50] Cf. Pan L, (2007)

layers together but he said there are many other techniques to ensure safety. [51]

This is a prime example of a guanxi relationship that ended because of lacking reliability from both parties.

5.3.3. Cost Related with Quality:

The cost of quality in China can be broken down into four different categories:

1. Prevention costs:

   These costs are associated with the design and implementation of the commodity that arises before actual operations. Prevention cost minimizes failures and mistakes by using clear requirement specifications of product and service, pre-production trials, the creation and maintenance of a quality system, inspection material and tools, training for all the relevant parties, and miscellaneous costs such as travel.

2. Appraisal costs:

   The costs are linked to product and service assurance conformance with special requirements and are overseen if all quality aspects are in place. Appraisal costs include verification of production against agreed specifications (for example quality audits, inspection equipment, assessment, and approval of suppliers).

3. Internal failure costs:

   These are associated with the failure of goods and services to meet the designed quality standards before they reach the customer (for example unnecessary work errors, wrong materials used, the failure of successful product re-examination, cost of products failing to pass a given quality standard, and cost related to internal quality failure identification).

4. External failure costs:

   These costs are involved when there is a seemingly successful product and service quality but a defect is discovered only after it has left the manufacturer's premises (for example warranty claims, after sales repairs and services, complaints associated with the quality of the product, the

[51] Cf. USA Today Newspaper, (2007)

liability in terms of legitimacy, and the loss of goodwill).[52]

In most global sourcing cases, primary quality cost occurs in the latter cost category specified, namely the external failure costs, but most Western companies sourcing from China assist the Chinese supplier to minimize the prevention, appraisal and internal failure costs.

5.4. Management, the Labour Market and Training

5.4.1. Management in a Business Context

Management is the process of completing a task by regulating the development of the project and collaborating human resources to reach optimal results. The quality of management is directly linked with growth. One aspect of management is entrepreneurship. China has a lack of entrepreneurship because its business institutions of the past did not allow entrepreneurship to flourish. Any change in management is costly because it requires additional personnel, time, attention and other resources. The decision makers who lead the firm must weigh these costs against the benefits they expect, thus ceteris paribus, the new management practices most likely to be adopted are those that promise the greatest cost reduction.[53]

In general, business managers learn through the course of their transactions over time and how well their chosen management practices adapt to a changing market.[54] General Managers in most multinational companies are expatriates from Western countries, with a two year contract in China. With the close relations drawn between management style and employee productivity, it is often difficult to achieve an optimal point because of cultural differences, different business scenarios and, in general, insufficient communication that leads to misunderstandings. In most cases, management is unfamiliar with the Chinese culture and unable to speak Mandarin.

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[52] Cf. Oakland S.J, (2003) Pp. 101-116

[53] Cf. Hubbard G, (2006)

[54] Cf. Boyan J, (1982)

5.4.1.a. Expatriate Packages

An expatriate is usually a manager who is internally transferred to another country for a specified period of time in order to transfer his or her skills and expertise. The cost of an expatriate is present in all countries because multinational companies send their management on global assignments. Therefore, the cost of an expatriate is not exclusive to China but since China has an extreme amount of expatriates, it is necessary to identify and analyse the costs.

Generally an expatriate's package breakdown is as follows:[55]

- *Moving allowance:* It entails everything from packing all belongings to shipping it to the final destination and back when their contracts expire.
- *Airfare:* This varies from company to company but usually the whole family flies business class.
- *Housing:* Expatriates usually stay in very prime areas, like golf estates or near the coast.
- *Utility Bills:* These bills are mostly fully compensated by the employer companies.
- *Transport:* Depending on the company's industry, the expatriate is assigned either a rental car with/without a chauffeur or a company car with/without a chauffeur. All maintenance cost and fuel are covered by the employer company.
- *Children's education:* Generally companies bear the total cost of children's tuition. They enrol at private and international schools that are more costly than similar schools at home. Public schools are out of the question because expatriate children are, in most cases, not able to speak the foreign language in which the classes are taught.
- *Medical and dental insurance:* This depends on the company's policy. Some fully cover the employee, but dependents and spouse only partially, while other companies cover the whole family. Again, the medical schemes are not the same as those in their home country. Usually the coverage includes international hospitals and doctors whose consultation fees are up to three times more expensive than the local doctors.

[55] Cf. Expat Singapore

5.4.2. Labour Market in China

Western management is utilised on a large scale in Chinese based companies because China has a very small pool of Chinese managers. Western recruits can expect 20% to double their current paycheque. Salaries of 6 million CNY is possible. Although this refers to Chinese based companies' who are seeking Western expertise, it is valid to argue that there is an overall shortage of capable Chinese managers. Benchmarking is non-existent in China and if a Westerner uses their bargaining power they can easily negotiate a very lucrative salary.[56]

Taking the existing demand for Western management into account, it is logical to believe that Westerners, who are transferred to China within their Western companies, will soon question their salaries, since these are fixed and determined by the company head office policies. Western managers may soon demand higher wages and, because the Chinese management pool is too small, companies will need to act upon their demands, as Western managers might leave the company in search for more lucrative offers.

China has experienced general wage inflation over the past few years. The implication of higher wages will have an impact on the economy and it might lead to demand inflation whereas the consumer has more disposable income with supply held constant.[57] In table 5.4.2 the movement in average salaries are illustrated for the years 2002 to 2005. In general, salaries have increased with 12.5% each year. Figure 5.4.2 shows the increase in salaries for 2005 in different regions in China. [58]

Table 5.4.2. The actual average wages in China.

Year	Total average CNY per year	Total average in USD per year	Total change in % from previous year.
2002	12 422	1 716	
2003	14 040	1 939	13.025%
2004	16 024	2 213	12.381%
2005	18 364	2 536	12.742%

Source: [58]

[56] Cf. Economist US, (2006)

[57] Cf. Moffalt M

[58] Cf. China Statistical Yearbook, (2006)

Figure 5.4.2. Average wage breakdown (USD) per major city for 2005.

With wages increasing rapidly on the coastline of China, Honda established its manufacturing centre, automotive assembly, and supporting component operations in Dongfeng, central China. Although this move enabled Honda to realise the benefit of relatively low wages, additional logistics[59] costs are incurred, such as transportation cost and warehousing.

5.4.2.a. Employee Loyalty and Commitment

After a lifetime under the impression that capitalism was evil, China is facing a massive shortage of intellectual capital.[59] Additional problems are insufficient English, lack of mobility, long work hours to

[59] Cf. Quint M, Shorten D, (2005)

compensate for the deficiencies without the expected productivity, and so forth.

Multinational companies train and promote Chinese employees as much as possible but it is time consuming and costly. Although companies offer attractive incentive packages for their employees in China, the bargaining power of the employees who have gone through company-provided training is stronger, since the trained workforce is very small and the demand for these employees are greater than the supply. The employee turnover rate (total terminations divided by headcount) fluctuated between 11.3%-30% in recent years.[60] In the Czech Republic, which is another favourable destination for souring automotive commodities in Eastern Europe, the median turnover rate was 14.8% in 2006.[61]

5.4.3. Employee Training in China

Continuous training and learning in the workplace is essential. Only 10% of Chinese graduates have adequate skills to start working in a multinational company. About 33% of Chinese students study engineering. This might cause shortages in some industries within the near future. A study done by Mckinsey consultants showed that only 3% of interviewees had passable English capabilities.[62] Training requirements in China does not only include skills but also language proficiency. English is a common language within multi-national companies, but not widely spoken in most parts of China. Therefore, communication is problematic.

5.4.3.a. Cost of Training

Multinational companies tend to spend more funds on training in countries where the illiteracy rate is higher and where English is not a common first or second language.

[60] Cf. Kundu L.S, (2006)

[61] Cf. PriceWaterhouseCoopers, (2007)

[62] Cf. Farrell D, Grant A.J, (2005)

The cost for DCCL to provide training for its employees entails the following:

- *Startup-cost:* Audiovisual equipment, working materials, preparation time and cost.
- *Ongoing cost:* Instructor fees and additional cost.
- *Productivity cost:* The absence of employee productivity in workplace while present in training. [63]

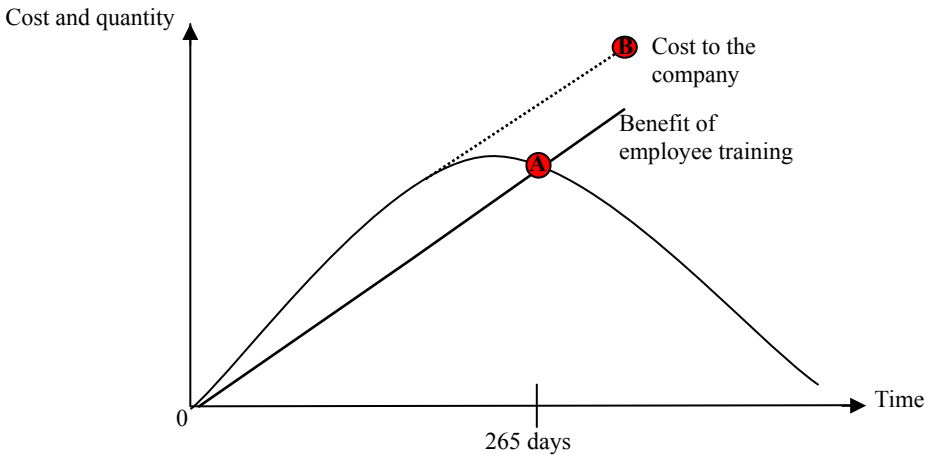
Taking China's labour market and the cost of training into consideration, the following scenario is illustrated in figure 5.4.3.a.

Assume that an employee has one hour language training per week (1x48 weeks because 4 weeks are estimated for annual leave/public holidays) and is obliged to do a minimum of 35 hours of additional training a year. The total hours dedicated for training per year is 83 hours (48+35). Figure 5.4.3.a illustrates the relation between the cost and benefit to a company when employee training is provided. The benefit gain exceeds the cost to a company of employee training at point A but point A also represents the turnover rate between 11.3 - 30% per year. Therefore, if the average turnover rate is 20.65% (11.3-30%) an employee will leave the company around the 265th day of the year (365* 0.2065). If the employee does not leave the company the benefit curve would be followed into the direction of point B.

The area between point A and point B can be seen as a dead weight loss since the company can not gain the benefit from training their employees. The time and money invested in training in China is very costly because of the high turnover rate in employees.

[63] Cf. Construction Experts Inc.

Figure 5.4.3.a. The impact that employee turnover rate has on employee training.



5.5. Intellectual Property Rights (IPR)

5.5.1. Definition of IPR

Intellectual property can be classified in two ways. On the one hand, it refers to industrial property and consists of trademarks, designs and patents. On the other hand, it refers to copyrights such as literature and artistic works.[64]

The production of intellectual property infringement products is easy and relatively cheap. It does not require a big capital base and counterfeit factories are usually small with low overheads. Therefore it is easy to reopen once it has been shut down.

5.5.2. The Impact of Counterfeits

- People who purchase counterfeit goods support and enhance illegal activities. The higher the demand of counterfeit goods the greater the supply of it.
- Counterfeiters are not registered companies and do not pay taxes. Taxes are used by the government investing the community in terms of schools, hospitals, parks and so forth.

[64] Cf. World Intellectual Property Right Organization

- Counterfeiters do not comply with minimum wages and employee benefits. In most cases employees work under harsh conditions and child labour is common.
- Organized crime and drug dealing has been directly linked with the profit from counterfeits producing firms.
- Counterfeits have a negative impact on innovation.[65]

5.5.3. Current IPR situation in China

Approximately 5-7% of world trade is pirated goods and this figure is increases annually.
In 2003 the Motor and Equipment Manufacturers Association discovered counterfeit automotive parts in China, such as transmission fluid made of cheap oil that is dyed, brake linings made of compressed grass, and oil filters that use rags for the filter element.[66]
Ford Motors incurs a USD 2 billion cost each year in counterfeit auto parts. The company investigated this issue and discovered that a Chinese factory was making brake pads and
7 000 sets of counterfeit pads with the Ford logo.[67]

Counterfeit auto parts such as chassis, brake shoes and bumpers with a value of USD 50,000 have been confiscated in a 2 000 m^2 warehouse in Shanghai. Among these parts where counterfeits of Volkswagen and a Chinese company (Shanghai Huizhong Co Ltd.) with items not even included in their product range but with their logo.[68]
In one particular Chinese city, 80% of all automotive parts were counterfeits. China is indeed not the only country guilty of having firms producing counterfeit goods but Chinese counterfeit goods add up to two thirds of global counterfeit goods. A calculation done in 2004 estimated that counterfeit goods accounted for 8% of the total Chinese GDP. The Chinese government tried to condemn counterfeit production but it does not stress the situation enough as the penalties are not very high.[69]

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[65] Cf. The international anticounterfeit coalition

[66] Cf. The international anticounterfeit coalition

[67] Cf. Fishman T.C, (2005)

[68] Cf. Lu S, (2007)

[69] Cf. Petizon L, Hoon L, Hayers S, (2007)

A lot of pressure are placed on China to improve their IPR. The government endorses such laws but there is a lack of enforcement and implementation. The USA government estimates that about 15-20% of all goods produced in China are counterfeits.[70]

5.5.4. Cost Evolving from IPR for Companies

- An IPR department must be established that would not be necessary if there was not a legitimate need for it.
- A company's reputation could be damaged if counterfeit goods are sold and labelled with the company's brand without the same quality standards.
- Job losses occur because, as demand rises for the counterfeit goods, the demand for the original product falls. With a lower demand of the original product, there will be a decrease in production and in return less labour is needed.

[70] Cf. Motor and Equipment Manufacturing Association

6. Introduction to Daimler Chrysler China Ltd.

Chapter six is a case study of Daimler Chrysler China Ltd. (DCCL) which reflects the impact of the influential factors (described in chapter five) when procuring automotive commodities from China.

Daimler Chrysler's (DC) long-term commitment to China is reflected in the company's Asia strategy. It started its business in 1930 by establishing offices and sales networks in Asia, and by increasing their presence in China. Today, they have four assembly plants in the Republic of China and the oldest automotive joint venture (Beijing Jeep – Daimler Chrysler) dates from 1983. The sourcing of automotive commodities began in earnest when Daimler Chrysler opened the North East Asia (NEA) head office in Beijing in 2004. Daimler Chrysler's operations in China is operates in four different business groups: Mercedes-Benz China limited (MBCL), Daimler Chrysler China limited (DCCL), Chrysler group China sales limited (CGCSL), and Trucks & Vans. All of these four business entities are managed by the head offices of NEA.

In 1998 Daimler Benz bought Chrysler Group, but the merger created mixed reactions. After several negative profit returns, Daimler Benz decided to sell 80.1% of its share in the Chrysler Group to Cerberus in 2007.[71]

6.1. The Global Sourcing Process

In the global sourcing process of automotive commodities from China three parties are involved: the business unit (BU) of DC in a country other than China, usually in Detroit (USA) or Stuttgart (Germany); the head office of DCCL NEA in Beijing, and the third party who is the supplier of an automotive commodity in China.

[71] Cf. Lassa T, (2007)

There are seven phases for DCCL to strategically source commodities from a Chinese supplier which are described below and are illustrated in figure 6.1.1. The global sourcing process usually takes about fifteen weeks in total to complete.

The global sourcing phases entail the following:
A 2 x 2 matrix is constructed where the BU's needs are compared with the supply base capabilities. The BU needs consist of cost competitiveness, quality performance, supply/logistics constraints, technology acquisition, and current supplier contracts. China's suppliers are primarily evaluated based on its competitive advantage (low cost labour), other Operations in Emerging Market's (OEM) targeted commodities, and logistics cost.

A potential supplier set is compiled by using a Global Procurement and Supply Information System (GPSIS) and Asian Supplier Database (ASDB) or through a general internet search. The list of selected suppliers must be approved by a supervisor in procurement. This will take approximately two weeks. Simultaneously, the BU prepares and sends Request for Quotation (RFQ) packages to the Global Procurement and Supply (GP&S) department of DCCL in Beijing.
The RFQ process follows when DCCL receives the RFQ packages from the BU. GP&S does a pre-check of the sourcing packages and confirms selected supplier sets with the relevant BUs. RFQ packages that describe the technical side, and if necessary a sample and the packaging details of the product (to estimate shipping cost) are sent out to the selected suppliers. Suppliers then submit their quotations after which GP&S analyses and compares all the quotes received. The supplier's quotes must include logistics costs. The quotes from the potential suppliers are compared based on the best selling price (calculated on landed cost). The best three quotations of all the quotations are compared with the current BU price, for example Germany/Mexico/Brazil/South Africa et cetera. The logistics-, quality department, and the Emerging Market Office (EMO) must approve all proposed quotations in compliance with their department's standards. The EMO in this case study is DCCL in Beijing. The process, from a RFQ preparation to receiving a quotation back from the suppliers, takes approximately four weeks.

A supplier pre-check is done by the quality team and supported by the procurement team of DCCL. This will take approximately one week, during which suppliers are rated in three different classes: recommend, developed and rejected. (The supplier evaluation categories are discussed in section 6.4.4.). If a supplier receives a 'recommended' status by the DCCL quality and procurement team, it means that the quality team believes the commodities the supplier produces are of a good quality in relation to DCCL's requirements. The 'development' category is assigned when the quality team thinks that the supplier could reach recommended status through some help from DCCL. A supplier is 'Rejected' when the quality of a supplier's components and general way of doing business are not up to standard and DCCL will not source from this supplier.

A report is compiled to summarize the findings of the quality and procurement team's opinion as well as quoted prices. Based on the four value driver (technology, cost, quality and supply) the most competitive quote from the Chinese suppliers, together with a summary with final data, is sent to the BU.

Following the sourcing decision, the BU's buyer analyses all quotes received. The analysis includes the cost breakdowns and the quotes are categorized in a competitiveness ranking. This analysis is then sent to every DC entity that provided quotes. DCCL conducts renegotiations with the two best suppliers with regards to the analysis done by the BU. After a final price has been agreed upon, DCCL sends the information back to the BU with the renegotiated prices for re-evaluation. The BU calculates commercial and technical analysis of the short listed global quotations. The quality department in DCCL performs an onsite source evaluation with the support of the engineering, procurement and supply teams in DCCL and the BU. A sourcing decision is taken according to the supplier's financial reviews and the BU compiles a full report of the sourcing decision to all countries that provided quotes. A contract is then drawn up together with the BU's legal team as well as the legal department of the designated country.

Supplier development is a semi-ongoing process with the focus on fixing unacceptable factors identified

from the source evaluation. The relevant country will lead the sourcing activity with the necessary support of the BU.

Figure 6.1. The global sourcing process of DCCL

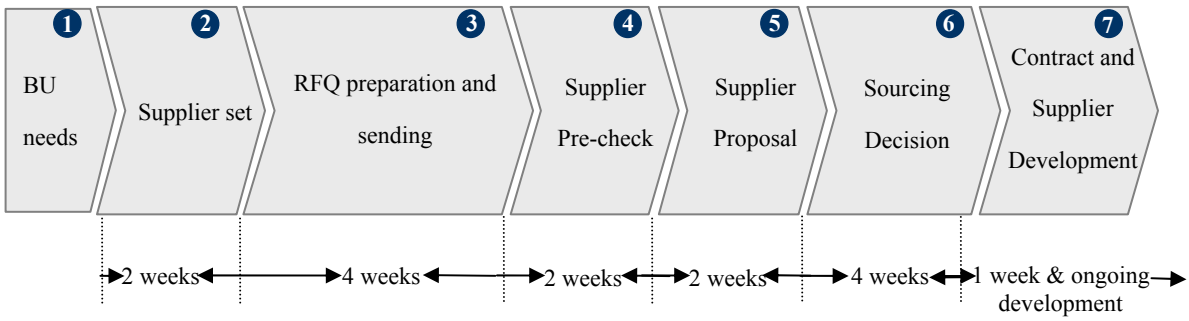


Table 6.1 indicates the commodities DCCL sourced from China for the last two and a half years. In 2005 the Chrysler Group, Mercedes Car Group and the Truck Group together sourced automotive commodities from thirteen suppliers in China. In 2006 that number increased to 55 and at the end of May 2007 that figure reached 85 suppliers. From 2005 to 2006 Daimler Chrysler increased their sourcing initiative threefold.

Table 6.1. Automotive commodities DCCL sourced from China.

Year	Chassis	Electrical	Exterior	Interior	Powertrain	Total
2005	5	2	1	0	5	13
2006	17	6	10	5	17	55
January – May 2007	25	88	11	12	29	85

6.2. Influential Factors

6.2.1. Management, Employees and Training

DCCL has 42 employees (beginning 2007) working directly on sourcing projects for export purposes. This number does not include support staff such as secretaries, cleaners and any employees who are involved in non-production procurement activities or any projects within the scope of localization.

6.2.1.a. Employees and Turnover Rate

There were 24 Chinese employee resignation, retirement or termination cases in DCCL head office in 2005 and the most prominent reason provided (42%) for leaving the company was because of individual career development. Most of these employees had been with the company between one and two years. Other reasons given as to why the employees left the company were personal reasons, internal relationship and going abroad.

The total turnover rate in Chinese management for 2005 was 10.6% in DCCL. This percentage is higher than other DC offices in other countries. Unlike other DC offices that do not face a high turnover rate in management, DCCL must focus on a retention plan (which adds additional costs) to minimize the management turnover rate.

6.2.1.b. Retention Plan

Although emphasis is placed on management and their supervisors, the same premise is used for lower level employees.

Strategic action is necessary to determine the employee's satisfaction level, whether it is a top-down or a bottom-up feedback approach. A survey done by DCCL employees shows that their employee satisfaction evolves out of four factors: rewards, performance, management and the employee's actual work. In order to identify the level of employee satisfaction, as well as crucial areas requiring attention, a questionnaire can be constructed consisting of five closed questions for each of the four categories.

The employee and his/her manager must both fill in a questionnaire with regards to the performance of the employee in his/her prospects in the company.

General questions could be:

In the category of actual job

- Employee's job assignment did not change for:

  1 year ☐ 2 years ☐ 3 years ☐ 4 years ☐ 5 years ☐

Management

- Employee receives feedback

  Once a week☐ Once a month☐ Every 2 months☐ Every 6 months☐

  Every year ☐

Rewards

- Employee's total compensation is on market average.

  Deep below☐ Below☐ Average☐ Above☐ High above☐

Performance

- Employee works overtime.

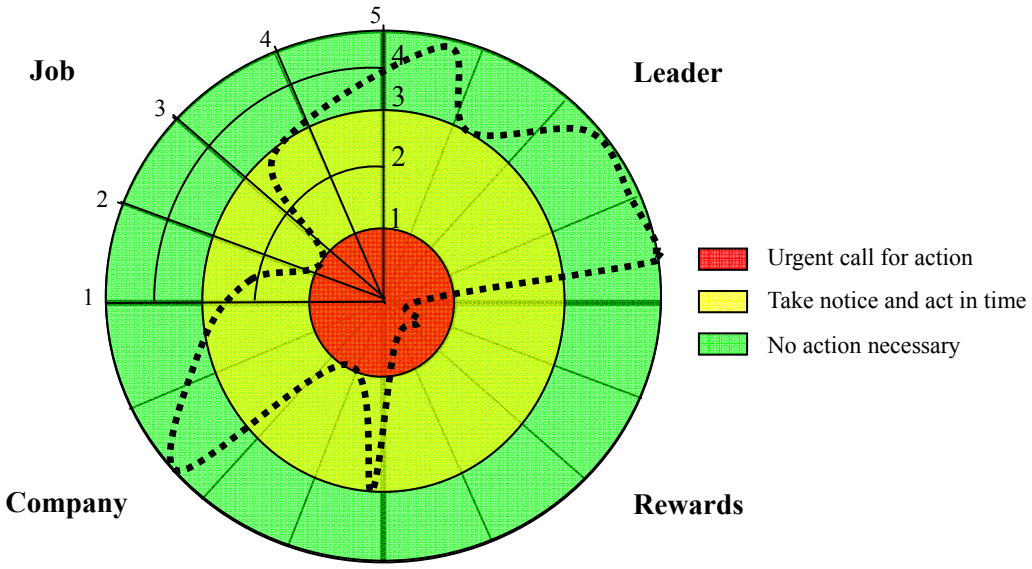
  Never ☐ Only if requested☐ Occasionally☐ Often☐ Always☐

Once the questions are completed, the result are illustrated in a pie/web diagram, illustrated by figure 6.2.1.b, where the answers of both the employee and managers are reflected individually in two separate but identical diagrams. When the answers of the employee is plotted on the diagram it indicates the employee's opinion about which categories need to be addressed and the illustration also specifies which categories need immediate attention.

Figure 6.2.1.b is an illustration of an employee's questionnaire, plotting the five questions per category. The employee is satisfied with his/her communication with the supervisor, averagely satisfied with his/her job and the company although certain points need urgent attention, and the employee is very unsatisfied with the rewards he/she receives. The same analysis are done by all supervisors for every

one of their employees reporting to them. Finally, the manager and employee's diagram are compared. The manager and employee must amend certain aspects in order to minimize the points plotted in the red areas.

Figure 6.2.1.b. Individual retention profile.



In 2005, 29% of all employees who left DCCL was on an entry-level management position. Table 6.2.1.b illustrates the turnover cost of a local, Chinese employee on an entry-level management position and the costs are broken into five categories. Section 1 reflects the normal cost to the company of an entry-level, Chinese manager without training cost. The training cost is illustrated in section two, while section three illustrates the number of Chinese employees with entry-level management status who left DCCL in 2005. Section four points out the cost of recruiting a new employee with similar skills as the one who left DCCL. Section five is a summary of section one to four.

Table 6.2.1.b. The turnover cost of a local manager in China.

1. Salary and Benefits of an entry-level, Chinese manager	**CNY**	**Converted to USD**
Base salary for a Chinese entry-level manager	339 040	46 822
+ Variable bonus	50 850	7 023
+ Annual benefit cost	80 000	11 048

(Social insurance, house funding, accident insurance, supplementary benefits, medical and physical insurance, heating and birthdays.)		
= Employee salary and benefits	469 890	64 893
2. Employee training		
Average training (hours)	48 hours	
Costs per person per hour	380	52
3. Turnover		
Employee turnover rate for 2005 in DCCL	10.6 %	
Number of employees (24 terminations – 42% entry-level managers)	10	
4. Recruiting costs[***]		
Estimated costs of recruiting	12 150	1 678
(Recruiting related staff costs, website costs, search for recruitment companies)		
Number of weeks to fill a job opening	5	
Number of screening candidates per job	15	
5. Turnover cost[*]		
Annual average employee compensation and benefit expense	469 890	64 893
New employee learning curve costs	155 063	21 415
Training costs	18 240	2 530
Recruiting costs	12 150	1 678
Candidate selection and interview costs *(approximate)*	20 704	2 859
Substitute employee cost *(approximate)*	46 989	6 489
Total employee turnover cost per job filled	**253 146**	**34 960**
Percentage of annual salary (Turnover cost/annual salary)	54 %	
The turnover cost in 2005 for Chinese entry-level managers ***(number of employees x turnover cost)***	**2 531 146**	**349 558**

As a result, it cost DCCL CNY 2 531 146 (USD 349 558) to replace the entry-level Chinese management that was 29% of the total 10.6% management turnover rate in 2005. There are several factors relevant for calculating hiring or replacement costs, but the most important factors are included in table 6.2.1.b. In an interview (see appendix 4) done on the 23 April 2007 with the General Manager of DCCL's human resources department, Mr. Ivan, said that the turnover rate would worsen in DCCL because of career opportunities and higher compensation at other automotive companies such as BMW and Volvo. Although every employee signs an employment contract, which stipulates a specified term to be served, the Chinese legislation does not enforce that term to be executed. Therefore, if an employee terminates

[***] Information can vary, based on:

- Average hourly recruiting cost: CNY 240 (USD 33)
- Pre-screening, phone interview, two interview rounds

[*] Source: www.gevityhr.com/solutions/turnover_costs_calc.jsp

his/her contract earlier than specified, no legal actions can be taken against him/her.

6.2.1.c. Management in DCCL

The senior management of DCCL procurement division consists out of six expatriates from either USA or Germany. The organizational structure of DCCL's procurement department comprises a vice-president of procurement NEA, one general manager of procurement, four general managers (quality, logistics, supply, localization) and one senior manager of supply. Each division's general manager has a team of five to fifteen people reporting to them who, in turn, reports to the vice-president. The vice-president of procurement reports to the board members and executives from Germany and USA.

According to the General Manager of Procurement, the difference in culture, language and productivity is a key challenge for foreign management working with Chinese employees. He also states that the main reason expatriates are assigned to foreign projects/countries is to transfer their skills and knowledge.
Since DCCL head office opened its doors in Beijing in 2004 there has been no Chinese manager. In 2006 there were approximately 160 expatriates in DCCL, MBCL and CGCSL and 33 relocations to-and-from China. Although the cost of expatriates are common in all companies it is necessary to emphasize the cost of expatriates in China because DCCL has more expatriates in China than any other office in DC.

In table 6.2.1.1.c the cost to the company is calculated for DCCL of an entry-level expatriate without a spouse and family, excluding any bonuses, relocation costs and leisure allowance. In the case where an expatriate has a family, the company covers international school fees, family health insurance, and so forth. A single, unmarried expatriate is the lowest cost to the company. Most expatriate relocations to China were from Germany. Their household furniture, via sea freight by shared container of 15 m^3 and cost approximately CNY 39 410 (USD 5 630).

Table 6.2.1.1.c. Cost to company of an entry-level, bachelor expatriate in DCCL.

Cost of an entry-level, bachelor manager in DCCL	**CNY**	**Converted to USD**
Salary per month (approximate, differs from department)	80 000	11 048
Housing per month	38 000	5 248
Utility bills per month	4 000	552
Chauffeur and fuel/car maintenance per month	15 000	2 072
Medical, physical, accident and social insurance per month	10 000	1 381
Total monthly cost to company	**147 000**	**20 301**
Relocation service form Stuttgart to Beijing *(15 cubic meter sea freight – USD 5630)*	39 410	5 443

In table 6.2.2.1.c a comparison is drawn between a Chinese and expatriate entry-level manager. It is calculated that an expatriate earns 4.2 times the benefits and salary of a Chinese manager, although their management status is the same.

Table 6.2.2.2.c. Monthly cost to company of an expatriate and a Chinese manager.

Expatriate monthly cost to company	**Chinese manager monthly cost to company**
147 000 CNY	34 920 CNY
Converted to USD: 20 302	Converted to USD: 4 823

The question is whether the expatriate's contribution is worth the increase in cost to the company. Taken into consideration is that most managers identify language, cultural difference and productivity as obstacles in their way of managerial styles.

6.3. Intellectual Property Rights

6.3.1. Daimler Chrysler Intellectual Property Structure

The IPR department in DCCL consists out of an expatriate General Manager and four team members. Unlike most DC offices around the world (IPR is usually handled by two employees in other DC offices) DCCL has its own department of IPR because of the degree of counterfeit cases in China. DCCL is a member of several IPR organizations, such as the International Anti-counterfeiting Coalition and the

Quality Brand Protection Property (QBPC), together with 180 large corporations.* Both these organizations aim to enhance enforcement and raise awareness of counterfeiting issues.

6.3.1.a. Reporting Counterfeits

The commodity groups in table 6.3.1.a categorize the automotive commodities that have been counterfeited in the past.[72]

Table 6.3.1.a. Automotive counterfeited commodities.

Chassis	**Electrical**	**Exterior**	**Interior**	**Powertrain**
Wheels	Fuses	Wiper blades	Airbags	Bearings
Steering components	Wiring accessories	Lights	Chrome rings	Engine parts
Control Arms	Batteries	Windshields	Floor mats	Pumps
	Watches	Body parts	Interior material	Filters

IPR protection in China was established in 1970, which is relatively late in comparison with other countries.[73] Awareness of the importance of IPR has grown to such an extent that it was brought under discussion in the G8 summit. China became a member of the WTO in 2001 and is obliged to comply with the regulations and rules of the WTO. The WTO has enforces the Agreement of Trade Related Aspects of Intellectual Property Rights (TRIPS) with which all WTO members have to comply. The treaty stipulates the laws and penalties for infringements in order to have a standardized agreement between all WTO member countries.[72] Unfortunately, the standardized penalties and laws are implemented in full because China still has modest regulation and fines with regards to counterfeit production and the distributions of counterfeited goods.

* http://www.qbpc.org.cn/en/about/about/members

[72] Cf. Organization for Economic Cooperation and Development, (2007)

[73] Cf. Michael D, Qian C, Boutenko V, Eckart R, Blaxill M, (2007)

6.3.2. IPR Case Example

In 2005 Daimler Chrysler collaborated with Toyota to bring Jieyang Kentong Automobile Glass Factory to justice. Kentong was raided between 1999 and 2001 on three separate occasions. The counterfeits had increased from 362 in the first investigation to 3 877 in the second and 7 081 in the third with an estimated value of CNY 1.5 million. Kentong was fined on all three occasions but the local Jiedong Procuratorate refused to prosecute this case.

In 2003 the case expanded to Guangzhou province where goods where confiscated at Xing Shi Sheng Da Glass Shop in Guangzhou were traced back to Kentong. Guangzhou Province Procuratorate took immediate criminal prosecution steps. Kentong was fined CNY 800 000 (USD 110 482) and its legal representative was sentenced to one year in jail and fined CNY 100 000 (USD 13 810).[74]

The General Manager of IPR at DCCL, Mr. Vaid, also points out that they have numerous problems with pirated products such as the software used for Mercedes-Benz's electronic display functions on the dashboard, as well as the body design of the Mercedes-Benz 300 SL.

6.3.3. The Cost Impact of Counterfeits on DCCL

DCCL is not aware of all counterfeiting activities in China and, therefore, it is difficult to calculate the impact the counterfeited commodities have on each original DCCL automotive commodity's total landed cost. The impact of counterfeits is an intangible cost which is very difficult to estimate. In order to tag a cost of IPR it is valid to focus on the prevention cost.

6.3.3.a. Cost Related with Preventing Counterfeiting

The general manager of IPR in DCCL , Mr. Vaid, specifies a few cost factors related to IPR (due to confidentiality no actual figures can be provided).

[74] Cf. APCO China, (2005)

Actions to combat counterfeiting that accrue actual costs are:

- *Product protection cost:* The cost of increasing the complexity of the products by raising the investment on Research and Development (R&D) of the automotive commodities. If there are continuous changes and improvement in the design of the automotive commodity, it would be more difficult for the counterfeiters to copy the commodities.
- *Cost of litigation:* The cost involved when legal action is taken against counterfeiters.
- *Investigation and research cost:* The cost of hiring external parties and government institutions to assist in the investigation and research of counterfeit cases in order to seize counterfeit producers before they reach the end market. It also involves travelling cost to the supplier and the cost connected with conducting random supplier audits.
- *Cost of awareness:* The procurement department are responsible for informing the IPR department about incidents where suppliers (in business with DCCL) support or participate the production of counterfeit goods. This procedure takes time and decreases the procurement employee's focus on their actual daily job. External awareness (buyers of DCCL, suppliers, management and the public) is also very important. Therefore, suppliers need to be cautious when sourcing parts from tier 2 and tier 3 suppliers.

Actions with intangible costs are:

Reputation and market share: If a defect in the auto part is realized after it has been assembled to the vehicle, a customer can lose trust in the credibility and safety of the brand and Daimler Chrysler can lose market share.

6.3.4. Comments from the General Manager of IPR in DCCL on IPR in China

Mr. Mayank Vaid, the General Manager of IPR in DCCL, shared some of his insight regarding IPR in China in an interview (see appendix 5).

Copying of goods has been a way of life in China throughout history. For example, in the Ming Dynasty, Chinese were not allowed to take any paintings with them when they moved houses. They had to copy the artwork in order to have the same painting. Egypt, India and China's safety of

civilization is through knowledge transfer. In other words these countries are so skilled at copying an original piece of work it is sometimes difficult to notice the difference between the original and forgery. Mr. Vaid is of the opinion that China is currently going through the same phase as Japan from 1960-1980. During this time Japan's economy grew at an impressive rate and because of increased competition in Japan's market place at that time, counterfeiting became a solution for suppliers to stay competitive. DCCL's IPR are 70% greater than previous countries in which the general manager had IPR experience. IPR is a reality in several countries like South Africa, Turkey, and some Middle Eastern nations but China, Mexico, Brazil and Russia are the significant problem areas.

The general weaknesses in China's IP system are:

- The low public awareness of the impact of counterfeits.
- Local government protection - some counterfeiters have a well- established guanxi relationship with government officials.
- Chinese legislation's insufficient prevention laws against the production of counterfeit goods.
- High threshold criminal cases. A counterfeit cases below the criminal case margin are treated as administrative cases. The criminal case margin must be lowered because the fines for criminal cases are higher than administrative cases and it is likely that the counterfeit production can decrease with more counterfeit cases taken seriously.

6.3.5. IPR Procedure in DCCL

The management of DCCL, MBCL, CGCSL, and Trucks & Vans are individually responsible to bring cases to the IPR department according to their findings and suspicion. In return, the IPR department investigates the situation either by conducting a supplier audit or working together with intellectual property organizations to gain more information and support. If the supplier is guilty of producing counterfeits they will seize the supplier and take legal action depending on the value of the counterfeit goods. When the value of the seizure is above CNY 50 000 (USD 6 905) for an individual or CNY 150 000 (USD 20 715) for a company it is viewed as a criminal case by Chinese legislation. If the value for

the seizure is less than CNY 50 000 for an individual or less than CNY 150 000 for a company, it is an administrative case by law. Most cases are administrative cases and settled outside court with a warning. DCCL is involved with numerous administrative cases on a daily basis.

The IPR department of DCCL works closely together with the product development department to gain an in-depth specification of the products and technologies to be patented, trademarked, and so forth. The R&D cost of goods from a high technology nature intends to be higher than automotive companies because of their small product lifecycle. Daimler Chrysler's annual report for 2006 calculated an expenditure of 5.3 billion Euros[75] (USD 7.57 billion) on R&D in comparison with a 3.6 billion USD (+/-2.52 billion Euros) of Hewitt Packer[76]who is a technology driven company. The degree of IPR cases in China is one of the reasons for the high expenditure in R&D in DCCL.

R&D is an intangible asset and a massive cost driver in the automotive industry because, very often, it is competitor's innovation that differentiates it from its rival. If a supplier in China copies a part but makes negligible changes to it is not seen as piracy, even though the changes are to less important parts of the commodity. Therefore, IPR plays a very crucial role to prevent piracy incidences before it occurs. Counterfeit goods are commonly present in the tier 2 and tier 3 suppliers. Consequently, it is not always easy for the procurement department to identify potential or actual counterfeit cases.

6.4. DCCL and the Quality of Chinese Automotive Commodities

6.4.1. Supplier Quality and Engineering Team

DCCL has twenty quality employees working in the quality department: 16 in NEA's headquarters Beijing and 4 in the Shanghai office. The quality teams work closely together with the engineering department and there are 26 engineers in NEA's headquaters in Beijing. All the members of the quality team have an engineering degree and are Chinese, except for the General Manager of quality, General Manager of engineering and the Senior Manager of supply (who are expatriates). The engineering

[75] Cf. Daimler Chrysler Ltd, (2006)

[76] Cf. HP Annual Report, (2006)

department consists of half Chinese and half expatriates.

6.4.2. Supplier Quality Evaluation Process

The supplier quality evaluation is a process of evaluating the overall quality of the potential Chinese suppliers with the intention of global sourcing of automotive commodities. The outcome of the supplier evaluation is then cascaded to the relevant parties in DCCL in order to identify and manage the risks of sourcing automotive commodities from that supplier's location.

The reason for the supplier evaluation process is to share resources and information with the BU (usually in Stuttgart or Detroit) who requested a quotation for an automotive commodity. Therefore, the global BU, which is in another country than from where it requested a quotation, does not need to send an evaluation team from their country. Instead, they would use the evaluation team of DCCL for quality evaluations among potential Chinese suppliers and other DC entities for other countries.

The source evaluation process is illustrated by figure 6.4.2. It begins with the submission of an evaluation request from the Senior Manager of quality and ends with an onsite source evaluation of the potential Chinese supplier. The information is analyzed and collected, then sent to the BU, who requests the quotation for the commodity.

The ideal process is that the buyer in procurement, together with the quality and engineering teams from DCCL, visits the supplier three times before a service agreement to source commodities from the supplier is signed.

The first visit is necessary for the procurement buyer from DCCL to introduce the supplier to DCCL's export activities and opportunities. Usually, the buyer who is in charge of sourcing the commodity, conducts this meeting and gather the following information about the supplier:

- *Business Figures:* The financial records of the most recent years, the number of employees, the amount of sub-suppliers of the supplier and the supplier's main competitors.
- *Company and Management:* Information about the supplier's cooperation in joint ventures

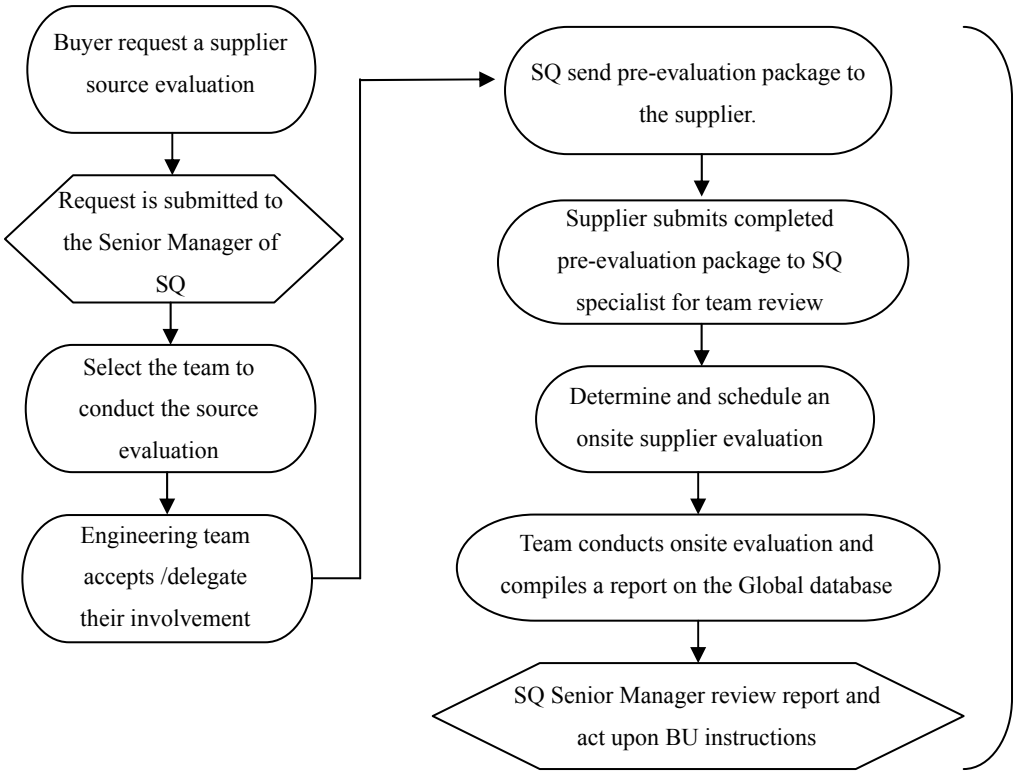
and other alliances. The location of the production site/s as well as the type of customer to whom the supplier delivers.

- *Logistics:* The logistics infrastructure of the supplier and his/her knowledge about the logistics network in China. Logistics is a significant cost component in the sourcing evaluation because the supplier must have an in-depth knowledge about it since DCCL uses DDP delivery mode where the supplier takes full responsibility for the freight delivery.
- *Quality Assurance:* Before automotive commodities can be sourced from a Chinese supplier, the supplier has to successfully pass a system audits.
- *Production and testing equipment:* The degree of technology the Chinese supplier uses in production and testing equipment.
- *Research and development (R&D):* The Chinese supplier's level of R&D in his/her company.

The second onsite visit is to the raw material warehouses, production line, final goods warehouse and laboratory.

The third onsite visit is to discuss a business opportunity between the potential supplier (with whom DCCL has been conducting business in the first two visits) and DCCL while conducting a specific competitive advantage analysis.

Figure 6.4.2. The Supplier Quality (SQ) evaluation process



6.4.3. Cost of Supplier Quality Evaluations

The source evaluation process is costly and the cost involved is not calculated in the total landed cost of the automotive commodities sourced from China. The cost of the supplier quality evaluations and supplier visits are not covered by the BU who requested a quotation from China, but carried by DCCL. Therefore, all the cost incurred in the supplier quality evaluation (a cost directly associated with the sourcing process) must be taken into account in the total landed cost. The Senior Management of quality and the Managing Director identify the costs involved in the sourcing evaluation process which is reflected in table 6.4.3.1. The expenses of the first visit generally includes travel, accommodation and travel allowances.

Through the global sourcing process the BU abroad takes responsibility for the process leading to the

issuing of a purchase order (PO). The local office in Beijing (DCCL) is just a supporting function for sourcing commodities from China. Therefore, the salary per buyer/engineer/quality specialists of DCCL (illustrated in tables 6.4.3.1, 6.4.3.2 and 6.4.3.3) must be calculated because DCCL carries these costs and not the BU. The quoted total landed cost only reflects the supplier's quoted price and not the actual total landed cost.

Table 6.4.3.1. Sourcing evaluation cost of the first supplier's visit.

Cost Description	**Cost per day (CNY)**	**Cost per day converted to USD**
Return plane ticket (per person)	2 100	290
Hotel (per person)	700	97
Taxis	400	55
Travel allowance for 2 days	440	61
Total cost per introduction visit	3 600	497
Total cost for introduction visits in 2005 (110 supplier evaluation)	**396 000**	**54 689**
Average salary per local buyer/ per day	1 120	155

The second supplier visit is calculated in table 6.4.3.2.

Normally one supplier quality specialist will conduct the supplier evaluation together with a procurement buyer and an engineer from DCCL. It takes approximately two working days to complete an onsite visit, hence, a round trip plane flight and one day's accommodation in a hotel. On average DCCL does 21 onsite supplier visits per month (252 a year) although in 2005 DCCL conducted 110 supplier evaluations.

Table 6.4.3.2. Sourcing evaluation cost of the second supplier's visit.

Cost Description	**Cost in CNY**	**Cost in USD**
Return plane ticket (per person)	2 100	290
Hotel (per person)	700	97
Taxis	400	55
Travel allowance for 2 days	440	61
Total cost of the buyer, engineer and quality specialist for source evaluation per second supplier visit	10 920	1508
Total source evaluation for 2005 (110 second supplier visits)	**1 201 200**	**165 889**

Average salary per local buyer/engineer/quality specialist per day	1 120	155

The third supplier's visit is when the BU decides to source from the particular Chinese supplier and a competitive analysis is done. Usually it is the same procurement buyer from DCCL as in the first visit who will lead the third visit. The third visit to the supplier takes one to two days and the cost is calculated in table 6.4.3.3. It includes travel cost, accommodation and travel allowances.

Table 6.4.3.3. Sourcing evaluation cost of the third supplier's visit.

Cost Description	**Cost in CNY**	**Cost in USD**
Return plane ticket (per person)	2 100	290
Hotel (per person)	700	97
Taxis	400	55
Travel allowance for 2 days	440	61
Total cost per visit	3 600	497
Total cost per visit x 14 successful sourcing suppliers in 2005	**50 400**	**6 960**
Average salary per buyer/ per day	1 120	155

6.4.4. Supplier Evaluations for 2005

Supplier evaluations are rated in three different categories, according to the outcome of the visit. The categories of the supplier evaluation have been briefly discussed earlier in chapter six under the topic, global sourcing (6.1) at point number four.

1. Green – *Recommend*: a PO can be awarded if the BU decides to source from this location.
2. Yellow – *Development*: PO can be awarded if the quality team of DCCL agrees that they will support the supplier to reach green status.
3. Red – *Reject*: under no circumstances will this supplier be considered for a PO.

A SWOT analysis is compiled for each supplier's evaluation to summarize their company's Strengths and Weaknesses, Opportunities and Threats.

In 2005, DCCL conducted 110 supplier evaluations, calculated in table 6.4.4.1. (Not shown in table 6.4.4.1. is the total supplier evaluations for 2006 of 252.) Among the 110 evaluations there were only 27 Chinese suppliers who were categorized as 'recommended', while 60 have been categorized as 'developed' and 23 as 'rejected'. In 2005 DCCL only sourced from 12.7% of the total suppliers evaluated.

Table 6.4.4.1. Supplier evaluations for 2005.

Year	BU	Supplier Evaluations	Pass	Develop	Reject
2005	Chrysler Group Export	74	23	40	11
2005	Mercedes Group Export	12	1	8	3
2005	Chrysler Truck Export	24	3	12	9
2005	Total	110	27	60	23
Actual number of Chinese commodity suppliers that received a PO in 2005					
Chrysler Group Export			7	5	-
Mercedes Group Export			-	2	-
Chrysler Truck Export			-	-	-
Total			14		
% Of suppliers used for 2005 and the amount evaluations conducted					**12.7%**

Almost half of the suppliers, from whom were sourced from in 2005, were in the development stage. DCCL does not invest any physical capital in suppliers who are rated in the development stage, but they do invest intellectual capital. A quality specialist from DCCL visits a supplier in the development stage around two to three days per month to support them in order to obtain green (pass) status.
The cost of helping a Chinese supplier to reach 'developed' status is illustrated in table 6.4.4.2. The same argument for the calculation is valid as mentioned in section 6.4.3.

Table 6.4.4.2. Cost of supplier visit in development stage.

Cost Description	Cost per day in CNY	Cost per day in USD
Return plane ticket (per person)	2 100	290
Hotel (per person for 2 nights)	1 400	193
Taxis	600	83
Travel allowance for 3 days	660	91

Total cost per supplier visit in developed stage.	4 760	657
Total cost per year for visiting suppliers in development stage (7) sourced in 2005.	**399 840**	**55 219**
Average salary per local quality specialist/ per day	1 120	155

The total cost of supplier visits for 2005 is calculated in table 6.4.4.3. The calculation includes the three supplier's visits per potential sourcing supplier and the supplier's visits in development stage for 2005.

Table 6.4.4.3. Total cost estimation for 2005

Cost Description for 2005	**Cost per year (CNY)**	**Cost per year (USD)**
Introduction visits, (see 6.4.3.1)	396 000	54 689
Local Buyer's wage per year for conducting the first supplier visit (CNY 1120 wage x 2 days x 110 supplier visits)	246 400	34 028
Supplier Evaluation second visit, (see 6.4.3.2 & appendix 1* for second supplier visit.)	2 404 200	332 026
Third supplier visit (see 6.4.3.3)	50 400	6 960
Local Buyer's wage for third supplier visit.	31 360	4 331
Quality specialist support to develop supplier (see 6.4.4.2)	399 840	55 219
Quality specialist wage (CNY 1120 x 3 days a month x 7 developed supplier x 12 months)	282 240	38 978
Supplier Visits	**3 810 440**	**526 231**
Sourcing cost savings calculated for 2005	21 600 000	2 983 013
Cost saving after supplier visits	**17 789 560**	**2 456 782**

An approximate cost saving of CNY 21 600 000 (USD 2 983 013) was achieved by sourcing commodities from China in 2005 in comparison with previous sourcing of the same commodities from other countries. The savings are solely calculated on commodity prices from base year to current year and do not take the supplier visits and other miscellaneous costs into account.

After the cost has been calculated for the supplier visits the cost saving that DCCL calculated for sourcing the automotive commodities from China for 2005 is CNY 17 789 560 (USD 2 456 782). The amount is almost half of the figure DCCL calculated for cost savings. The cost saving amount of CNY 17 789 560 (USD 2 456 782) is still a favourable cost saving but the fact that the

* 1/3 of the engineers involved in the supplier evaluation are expatriates, see 6.4.1.

supplier evaluation process is one of many influential factors that are not included in the total landed cost of commodities sourced from China, must be taken into account.

6.4.5. Obstacles in the Sourcing Process

6.4.5.a. General Manager of Engineering

The General Manager of engineering from DCCL, Mr. Ulrich Zillman, shared his views on the quality of automotive commodities sourced from China in an interview (see appendix 6). Mr. Zillmann has previous experience in South Africa and Germany

The entire set of automotive commodity designs are in Stuttgart (Germany) and Detroit (USA). When a Chinese supplier is asked for a quotation on a particular commodity, he/she sends a proposed product to DCCL and DCCL ships it to the BU who requests a quotation (either to Stuttgart or Detroit). The design and engineering teams (in Stuttgart or Detroit) examine the proposed product from the Chinese supplier. These teams modify the Chinese supplier's proposed product and design to fit DC's standard and quality. Thereafter, an altered design is released to the Chinese supplier. In return, the Chinese supplier adjusts their product parallel with the product changes made by the engineering and design team of DC. After the Chinese supplier makes the changes to the product, depending on the complexity of the commodity, the new proposed product is either shipped back to the design and engineering team (Stuttgart/Detroit) or a team of four or five engineers and designers from Stuttgart and/or Detroit visit the supplier in China for approximately one week.

The biggest complication in this process is the perception of the supplier and employees of DC in the USA or Germany and consequently it creates a difficult situation in GP&S. The design team and actual engineers, familiar with the part, are on a different continent while the GP&S office in Beijing does a major part of the sourcing process. If the engineering and designing team from the USA or Germany comes to Beijing they face a huge language barrier and often not all the knowledge is efficiently transferred to the supplier.

The difference in sourcing between China and any other country are:

1. Chinese companies have enough facilities and money but they do not have the skills and expertise to use it.
2. The Chinese economy has an effect on the supplier's perception because the Chinese supplier believes he/she knows better and their equipment and resources are of the latest and the best.
3. If companies want to source from China it must be in large volumes, otherwise, the business commitment from the Chinese supplier drops tremendously.
4. The quality of Chinese commodities must be controlled on a continues basis because of the inconsistency in quality.

East European countries have become just as cost competitive as China and with fewer logistics and quality problems it should be easier for Germany to source from East European countries instead of China. The reduced cost is not only in transportation but also a decrease in procurement cost and customs.

In table 6.4.5.a the difference between the taxation structure in China and Czech Republic (East Europe) is shown. The import and export licences in the Czech Republic is more difficult to obtain than in China. The customs related to the Czech Republic is of an EU nature, thus, widely known through Europe, while Chinese customs are based on the Market Access and Compliance tariff schedule. The corporation tax for companies in China (33%) is 11% higher than the corporation tax in the Czech Republic (24%).

Table 6.4.5.a. Taxation and customs structure in China and the Czech Republic

	Asia (China)	Europe (Czech Republic)
Import/ Export Licenses	Government policies in this area are contained in its regulations for the administration of import and export of technology. Regulations on technology imports state that foreign companies with patents, trademarks or other intellectual property are free to enter into licensing agreements with local companies.	Must comply with the January 2004 tariff schedule of the International Customs Tariff Bureau. Registration is compulsory for businesses with an annual turnover above Czech Koruna 1 million. There is transfer-pricing and thin-capitalization legislation. The legal provisions governing the organization of Czech companies are set out in the commercial code.
Customs	Must comply with China's Market Access and Compliance tariff Schedule	Member of the EU means that most tariffs and standards must conform to EU norms.
Sales Tax	17%	19% (reduce rate of 5% for certain services and essential goods.)
Corporation Tax	33%	24%

Source: [77]

6.4.5.b. General Manager of Supplier Quality

Dr. Scott Stryker, the General Manager of supply quality in DCCL shared his views of the current quality situation in China in an interview (see appendix 7).

Chrysler's headquarters are in Detroit (USA) and Mercedes group's in Stuttgart (Germany). Communication across three different continents and time zones is difficult and leads to time constraints.

Cross-functional communication can also be difficult because neither the BU nor the quality, procurement or engineering teams have the same objectives and expectations.

Another concern is the perception of quality. There is a considerable difference in quality between export and local goods. If a Chinese consumer's car breaks, the owner takes it to a local repair shop and claims the invoice from the Daimler Chrysler dealer. Chinese consumers are unfamiliar with the concept of a warranty. This is a problem for DCCL because the warranty policy states that the owner needs to take his vehicle to an authorised DC dealership if there are any problems with the vehicle or

[77] Cf. State of Flux, (2005)

when the vehicle needs to be serviced. The production of automotive commodities for local demand is lower and, in general, cheaper than DC's standards and price. Therefore, the local car repair shops buy the cheaper parts and when DC vehicle owners take their car to the local repair shop, the vehicle is repaired with cheaper parts and can harm the image of DC's products.

It is crucial to do supplier evaluations and continuous audits and visits of DCCL's export automotive commodities. Since DCCL started sourcing from China there have not been many cases where there was a defect in the quality of the shipment because of the continuous difficulties in communication between the buyer and the supplier. If there were to be any quality issues it would be to the disadvantage of the supplier because the supplier would have to replace that particular shipment at his/her own cost.

6.4.5.c. Quality Specialist

A survey (see appendix 8) was conducted with a random selection of six Chinese quality specialists in DCCL on the 21 May 2007, to gain insight as into their practical experience with Chinese suppliers.

The majority states that foreigners would not be able to communicate effectively with suppliers because few of the suppliers can speak English. They perceive the supplier's commitment and knowledge as problematic but they emphasize the quality of products and supplier's efficiency as critical drawbacks. Project management, good planning, preparation, time management, not blindly trusting the supplier but drawing conclusions from facts and what the quality specialist personally encounters are essential skills to do supplier evaluations.

6.5. Logistics

6.5.1. Logistics in DCCL

The logistics team in DCCL consists of an expatriate General Manager of logistics and three team members. DCCL uses DDP as a logistics method of delivery and the General Manager of logistics in DCCL states that, for the time being, it is the most convenient and lower risk method. The supplier takes full responsibility for all logistics costs and the total landed cost for automotive commodities quoted for DCCL already includes all the duties and freight cost.

However, DDP has some disadvantages for DCCL because DCCL does not have any input in the transportation rates negotiated by the Chinese supplier and the logistics company. The logistics cost of DDP is higher than FOB and if DCCL uses FOB they could fill one container with various parts and ship it to a desired destination and receive a better transportation cost per piece. But, in the case of DDP, the supplier fills a container with different parts and orders for various companies. In reality DCCL pays a higher price on each shipment because they use DDP, taking into consideration that DCCL has exports to several destinations around the world on a regular basis from various Chinese suppliers. DCCL could save a percentage on each shipment by collaborating the orders (from Chinese suppliers) that has the same final destination.

DCCL transfers a lot of the logistic risk and the complex governmental regulations to the supplier by using the DDP transportation mode. The Chinese suppliers will own the inventory DDP and will hold some stock in North America and Europe to account for schedule fluctuations. Although a certain amount is specified by DC, the Chinese suppliers determine with what they are comfortable based upon their logistics channel and the particular automotive commodity. If a supplier does not deliver the correct quantities or if the shipment is late, DCCL will classify such a supplier as a critical case. Consequently, a supplier analysis will follow to investigate the origin of the problem.

DCCL makes use of Third Party Logistics (3PL) but it is not part of the sourcing decision. The decision

to use 3PLs is to facilitate the shipment of automotive commodities and Chinese supplier interface. A 3PL provides supplier training and support to the Chinese supplier with regards to automotive part releases, shipment tracking and visibility, and warehousing. The decision for DCCL to use 3PL and implement them with the Chinese suppliers is to insure consistency across various suppliers and speed up the implementation, making the addition of new, inexperienced suppliers easier.

6.5.2. Logistics in China

In an interview (see appendix 10) the logistics team of DCCL states that China's infrastructure is improving but the railway is still not suitable for freight transportation. Sourcing commodities inland, to take advantage of the low cost wages, results in a higher logistics cost. Some automotive parts are high volume and the suppliers producing such commodities must be near the main ports for shipment and utilization because there is a trade off between cost and time. Logistics cost is rising in China because of the increase in exports in relation with the limited transportation infrastructure.

6.5.3. Challenges for DCCL in China's Logistics

The General Manager of Logistics, Mr. Cook, claims that (see appendix 9) the suppliers generally lack the sufficient knowledge and expertise to effectively execute a logistic project and there is an inconsistency of supplier's shipment in terms of quality and reliability.

According to one of the logistics team members, who have been working in logistics for numerous years, China does not have a long history in supply chain management. When logistics is mentioned to Chinese, they only think of transportation and do not consider the whole supply chain. Chinese logistics network only developed within the last five years. Therefore, China does not have many local capable logistics companies for executing the imports and exports to and from China. Most logistics companies, which meet the OEM requirements, are multinational logistics companies in joint ventures with Chinese companies. This is another explanation why the logistics cost in China is two to three times higher than in other countries, such as the USA. It is necessary that Chinese logistics companies

need to improve their entire service scope and management idea.

The automotive commodities are not transported from China by air and this occurs less than 1% of the total sourcing activities, mainly because of time constraints. The main reason for time constrains are when DC makes engineering changes to the commodities. There are some commodities that are very unique and the production material is imported to China. These materials are often air freighted in order to reduce switch time. It can also be possible that suppliers do not schedule their production and transportation time accurately and the late delivery is then the supplier's fault. Delayed deliveries may cause volume shortages and damaged parts due to the long transportation. In worst case scenarios DC will demand the commodities be transported via air. But DCCL controls its suppliers by DDP terms and the supplier is fully responsible for on time delivery, except when DCCL is to blame for the delay.

6.5.4. Logistics Cost in China

The impact of logistics cost to DCCL is difficult to calculate because DCCL does not manage the logistics of their exports. DCCL has limited liability in terms of logistics processes and all the responsibility falls on the supplier. As a result, the cost impact of faulty deliveries or tardy deliveries can be seen in the delay in the production on Daimler Chrysler's assembly lines. Unfortunately, the exported commodities from China go to various regions and the impact of the delays are not accessible from DCCL.

Illustrated in table 6.5.4 is the remarkable increase in the logistics cost from 2005 to 2006 keeping in mind that logistics costs in the USA are around 10% (see 5.2.3.) of the total landed cost.

One would expect that with such a high percentage of logistics cost, the quality and timely delivery would be high but in 2006 the average (on time) delivery rate for suppliers were 72.89%. Suppliers are evaluated according to their shipping performances. With an on time delivery rate of 72.89% one can assume there must have been a roll over delay in assembly at the foreign production sites of 27.11%, if safety stock was not taken into account. This percentage could have a very dramatic effect on the assembly of DC products. Competition in the automotive industry is very high and if the company can

not produce according to the market's demand, customers might change to another car brand.

Table 6.5.4 illustrates the fluctuation in logistics cost as a percentage of the total landed cost, in 2005 and 2006, for each commodity group in DCCL and the average on time and in full delivery rate for 2006. The total average increase in logistics cost between 2005 (17.2%) and 2006 (25.2) was 8%. The average on time and in full delivery rate for all commodities in 2006 was 72.89%, with interior as the only commodity with a 100% delivery rate.

Table 6.5.4. The cost of logistics fluctuation in China.

	Chassis	**Powertrain**	**Interior**	**Exterior**	**Electrical**	**Total Average**
2005	24%	13%	18%	20%	11%	17.2%
2006	24%	22%	38%	30%	12%	25.2%
Average ontime and in full delivery rate	77.59%	62.16%	100%	45.02%	79.68%	72.89%

The question is if DCCL takes full responsibility of its logistics will the on time delivery percentage change? The main reasons the delivery rate is not 100% is due to infrastructure in China. If DCCL manages their own logistics the on time figure might increase but not with a sizeable percentage because railways in China must first improve, bureaucracy needs to be limited, and a mindset of supply chain management should be nurtured.

7. Is China Echoing the Economic Miracle of Japan from the 1980s?

Chapter seven highlights the similarities in economic growth between Japan between 1960-1980 and China today. The aim of the chapter is to provoke consideration about whether China's economy will follow the same path as Japan and, in terms of economic similarities, whether it will be feasible to procure automotive commodities from China in the future.

The growth in China's economy has been compared to the 1980s in Japan's when their economy made headlines as a "miracle economy". The US was threatened by the increased presence of Japan in several industries but, currently, China is viewed as the newest emerging threat to the USA.

7.1. Japan and China's Economic Trends

7.1.1. Japan's Miracle Economy (1950-1990)

The Second World War ended in 1945 and a post-war miracle occurred in the economy of Japan. The after effects of the Second World War left participating countries in devastation with unemployment and inflation but Japan's economy showed immediate improvement and growth and from the 1960s (second decade of the Japanese economic miracle) the Japanese economy grew at a rapid pace until the early 1990s. The Japanese economic miracle was not only created by the military assistance from America which enabled Japan's government to save a huge amount on defence spending, but also the policies the Japanese government implemented and encouraged, for example, low interest loans to industries that are crucial for economic growth and restructuring the Japanese economy to facilitate development. Figure 7.1.1 illustrates the economic trends of Japan for four decades.[78]

[78] Cf. Maciamo, (2004)

7.1.1.a. The Fluctuation in GDP

The GDP growth is illustrated as a bar chart in figure 7.1.1 on the secondary y-axis on the left side. Throughout the 1960s Japan's economy grew by an average of 10%. In the 1970s it grew by an average of 5% and, before it reached the point of stagnation in the early nineties, the economy was still growing with an average of 4% (see appendix 2). Japan's government has boosted business by lending money at low interest rates.

7.1.1.b. The Currency Fluctuation

The currency of Japan is called Yen (¥). The fluctuation in the Yen is illustrated by the pink line graph with a secondary y-axis on the left side of figure 7.1.1 (see appendix 2).
The Yen was first based on the Bretton Woods system until the 1950s and, during this time, the Yen was heavily undervalued. Japan changed to a fixed exchange rate, following the devaluation of the USD in 1971 and in 1973 Japan converted its foreign exchange policy to a floating exchange rate. No immediate changes occurred until 1978 when the Yen started fluctuating tremendously. The outcome of the change in the exchange rate regime was a triple/quadruple increase in the value of the Yen, thus, reflecting its real value.

Japan was focused on enhancing its exported figures through emphasizing the development in the automotive and electronic industries.

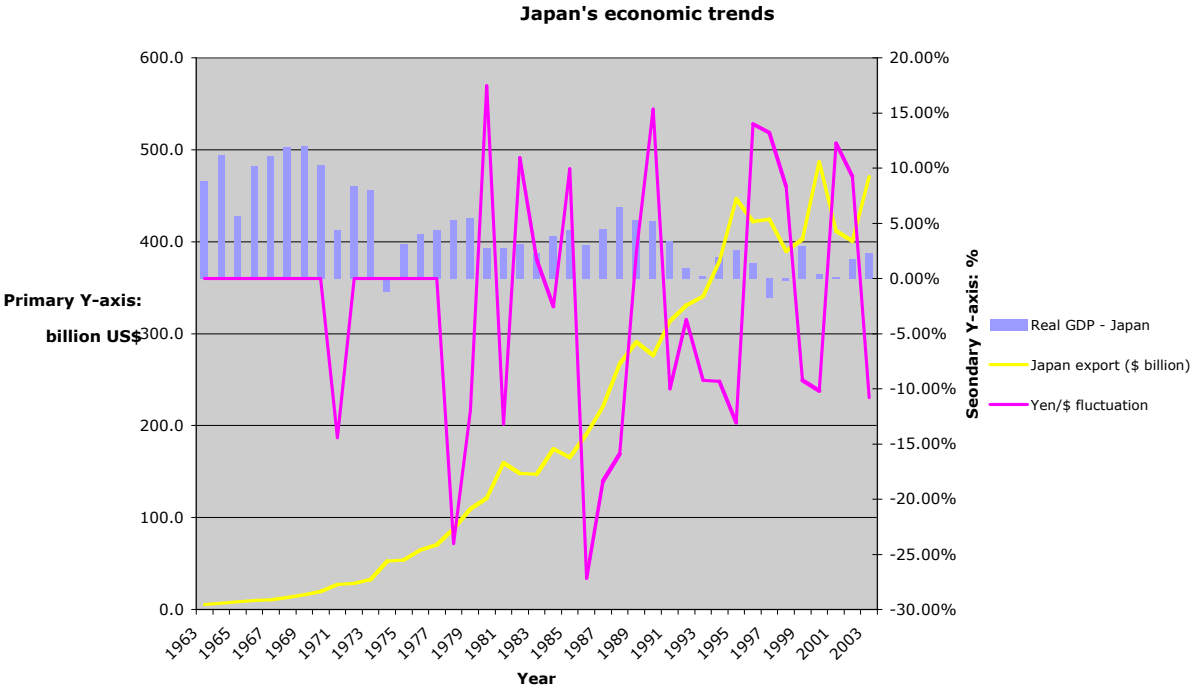
7.1.1.c. Japan's Trade Balance and Exports

Japan's main export activities from 1947 to 2003 were textiles, metals, electrical machinery/appliances, and precision instruments to the United States, Korea, China and Germany (as the five biggest trading partners). All of these countries showed a trade deficit with Japan (with more Japanese imported goods and services than exported to Japan). South Africa was one of few countries with a trade surplus with Japan with more goods and services exported to Japan than imported to South Africa.

7.1.1.d. Japan's Economic Miracle in Retrospect

The economic miracle grew at a slower pace during the late 1980s and eventually led to stagnation. Economists argue that the main reason for stagnation is the disequilibrium in bank's reserves because of low interest rates. Many people borrowed money from the Japanese banks and, because of inflation, it was easy to pay these loans back. In 1990 the first problem arose when too many bad loans were circulating in the Japanese economy and it was the cause of many Japanese bank's bankruptcy.[79]

Figure 7.1.1. Japan's economic trends.



Source: [80]

[79] Cf. Maciamo, (2004)

[80] See appendix 2 for analysis.

7.1.2. The Economy Growth in China

The People's Republic of China's economy shows rapid growth in areas of GDP, currency exchange rate, exports et cetera.

7.1.2.a. The Gross Domestic Production (GDP) Fluctuation

Figure 7.1.2 illustrates the movement in the secondary y-axis on the left.

The economy started showing favourable growth rates in the early 1990s and to a lesser extent, in the late 1990s because of the Asian financial crises in 1997. It is only in 2001 that China's GDP rose at a consistent pace and has continued to grow (see appendix 3).

7.1.2.b. The Currency Fluctuation

China's currency is known as Yuan (CNY) on the financial markets but it is informally referred to as 'Reminbi' and 'Qui' by the Chinese. The CNY is based on a pegged exchange rate. It is pegged to major currencies, for example, the USD, Euro, Japanese Yen, Korean Won and smaller influences by other currencies like the Thai Baht, Australian Dollar, Russian Ruble, British Pound, Canadian Dollar and Singaporean Dollar.[81] The fluctuation in the CNY is illustrated in figure 7.1.2 by the pink line graph on the secondary y-axis on. The fluctuation is not very significant (see appendix 3) over the period from 1997 to 2006 because of the fixed exchange rate system. Economists also believe the CNY is heavily undervalued which is very favourable to China's exports.

7.1.2.c. China's Trade Balance and Exports

The export activities are illustrated in figure 7.1.2 with the yellow line graph on the primary y-axis on the left side. China's main export industries from 1999 to 2005 are electronics, machinery, mineral fuel/oil, optics/medical, and plastic commodities to US, Japan, Taiwan, South Korea and Germany as main import countries. Taiwan and South Korea are the only countries of the top five trading countries with China that do not have a trade deficit with China, indicating that their exports to China is higher

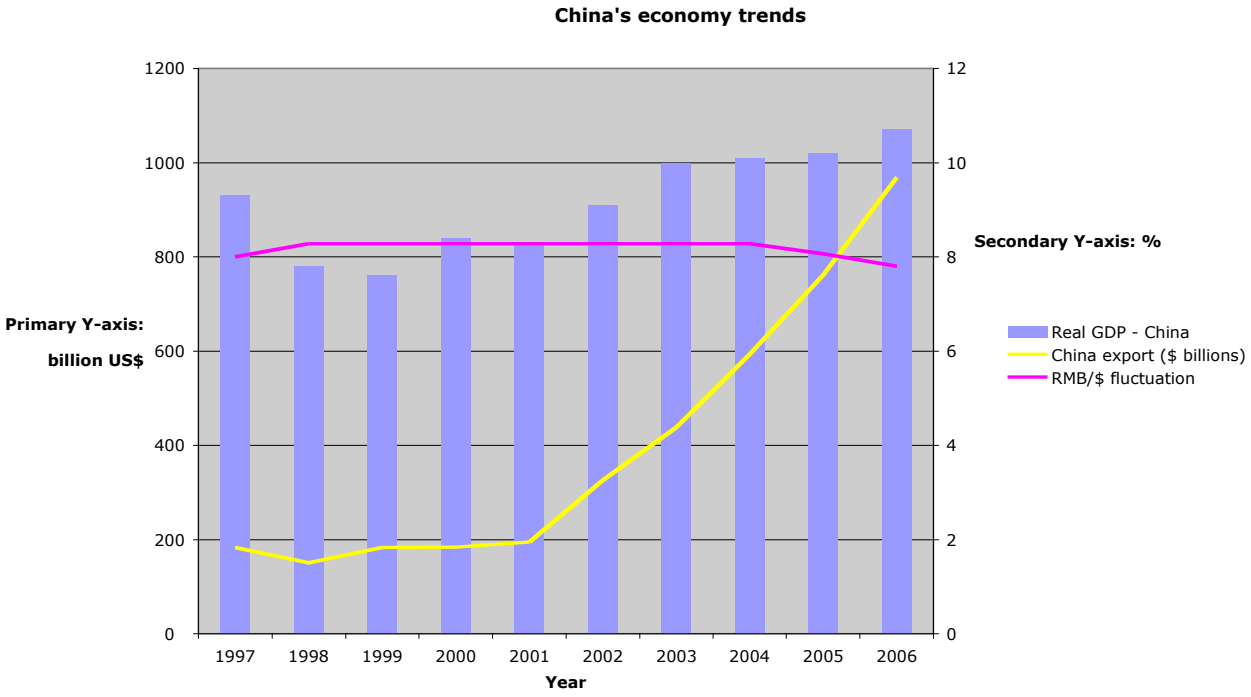
[81] Cf. China Daily, (2006)

than their imports from China.

7.1.2.d. China's Economy Growth in Retrospect

In 1978 China went through an economic reformation phase towards a market-based economy. Unlike Japan, it is difficult to tell which economic, foreign and governmental factors are the main influences on China's magnificent growth rate as most data is based on speculation and the current situation. In a few decades, history would be the only aspect able to illuminate the outcome of the magnificent economic growth rate in China.[82]

Figure 7.1.2. China's economy trends.



Source: [83]

[82] Cf. Bnull R, (2005)

[83] See appendix three for analysis

7.1.3. Similarities and Differences Between Japan and China's Economic Growth

The global perception of China has changed because of its rapid economic growth and there are several similarities between Japan, in the 1980s, and China in the beginning of the 21st century. The difference between these two Asian giants is that China does not have the management and technological expertise that Japan had in the 1980s and, unlike Tokyo, Beijing is more open to foreign direct investments and the entry of multinationals in China. In retrospect, Japan was forced to strengthen the Yen to decrease the trade deficit with the US, a similar scenario faced by China today. Japan had a very conservative outlook in terms of trade and had many trade barriers, which is a significant explanation for its trade deficit. China is a member of the WTO and aims to minimize trade barriers for favourable global trade purposes. The US had a sense of injustice while doing business with Japan in the 1980s but the US experiences anxiety while doing business with China, because China receives support from regimes not supported by the US and the political influence of the Chinese government in China's economy.[84]

In an interview (see appendix 11) with Prof. Chienkuo Wu (Professor of Economics from Shanghai Maritime University in Shanghai) he strongly differs from the general assumption that Japan's miracle economy is reviving in the current situation in China. The difference between China today and Japan forty years ago is that China follows its own path but under the influence of the US. There is a very strong, though subtle, relationship between the USA and China and China is even strengthening its ties with the EU.

The small number of Chinese entrepreneurs and managers in China has an academic background mainly from the US and, to a lesser extent Europe. These entrepreneurs nurture a Western management style through an awareness of the importance of global perception. The current Chinese education curriculum has been adjusted to meet certain requirements similar to those of the USA. China is a unique country that does not follow any other country's trends or examples. There is a popular saying in China: "we want to build up our own socialism with Chinese characteristics". One of the reasons why academics and economists draw a relation between China today and Japan forty years ago is because of trade surpluses with many countries.

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[84] Cf. Newcomb A, (2005)

The balance of trade equals economic development of a country. It is a very useful tool for a country to regulate and stimulate its national economy, technology and manufacturing industries. China's government is more flexible in ruling today than fifty years ago, but it is still very different from the countries with which it competes. The Chinese government is capable of stimulating their economic development at the same time increasing its global presence, providing in domestic demand, as well as enhancing its outsourcing activities. Unlike most countries, for example Japan, China's government has an extremely strong influence on its population. When a policy is issued it can be implemented with immediate action.

It is difficult to draw a parallel between the supply chains of China today and Japan forty years ago because supply chain management has only been defined in the 1980s. China is undergoing tremendous changes to improve its supply chains, especially in logistics, but it will never reach the same quality as Japan today because of the country's size. China's land capacity is much more than Japan's, therefore, it will take longer to build a sufficient integrated supply chain in China.

In the late 1980s when Japan's economic miracle became a catastrophe, the Japanese government did not have the influence on its population that the Chinese government has today. The economic growth is more sustainable in China than in Japan because of the difference in state authority. If there are any signs of an economic problem, the Chinese government acts immediately. On the contrary, there is the risk that economic policies implemented by the Chinese government might have consequences that are not expected. China issues a five year plan every five years that stipulates certain goals to be achieved in that five years. It enhances the efficiency with which to regulate its economy and gives a clear idea about their vision.

8. Conclusion

China is a popular developing country for sourcing automotive commodities, mainly because of low cost labour that accounts for a huge cost saving. Most Western companies sourcing from China have a flaw cost perception of costs that occur before, during and after the procuring process. These hidden costs are hardly ever taken into account in the total landed cost of automotive commodities. It is important to address the hidden cost involved in procuring automotive commodities from China because the expected cost savings Western companies calculate when sourcing from China does not include all the cost present in the sourcing decision and process. Although hidden cost exists in every strategic sourcing decision, irrespective of the country, the focus of this thesis is on China because of the popularity of procuring commodities from China and the complexity of China's business ethics and business market. Therefore, when automotive commodities are strategically procured from destinations around the world, for example China, the sourcing decision must not only be made by comparing the total landed costs of commodities but also the complexity of the hidden costs.

The hidden cost that has an influence on the total landed cost, consist out of guanxi,* indirect business logistic obstacles, the cost of quality in China, management, training the Chinese labour market and intellectual property rights (IPR). These influential factors are described in context with the current status it occupy in China as well as the hidden costs associated with the influential factors.

The case study of DCCL proves the impact that management, employees and training, IPR, Chinese supplier quality and logistics in China have on the expected cost saving calculated by DCCL. The cost saving DCCL calculated for sourcing automotive commodities from China in 2005 was CNY 21 600 000 (USD 2 983 013). If the hidden costs, which are directly involved in the sourcing activities in China are taken into account the cost saving for 2005 will decrease. The supplier evaluation cost is calculated as CNY 3 810 440 (USD 426 231) for 2005 and the turnover cost for 2005 is CNY 2 531 146 (USD 349 558), which grosses CNY 6 341 586 (USD 875 789). If Mr. Ivan's

* The relationship between two parties based on mutual interests and benefits.

(General Manager of human resources) assumption that the turnover rate of Chinese employees could worsen in the future is correct, the hidden cost in the employee's turnover rate could increase.
The cost associated with guanxi and IPR are intangible costs and no analysis can be drawn from DCCL's data yet these factors have a negative effect on cost saving because there is a cost involved which is not taken into account in the total landed cost in automotive commodities procured from China. The impact of the hidden logistics cost is visible at the Daimler Chrysler (DC) Business Unit (BU) who requested a strategic sourcing opportunity because DCCL is an administrative supporting function for DC's logistics.

Thus, by only taking two of the hidden cost factors (supplier evaluation cost and employee turnover cost) into account, the cost saving that DCCL calculated in 2006 decreases from CNY 21 600 000 (USD 2 983 013) to CNY 15 258 414 (USD 2 107 225). If all the hidden costs could be analysed the cost saving might have plunged to a relatively unworthy strategic sourcing activity.

Parallel with the hidden cost, the economic growth in China is also a valid factor to emphasize because of the possibility that living cost might increase (as a result of the high economic growth) in China and the purchase parity might decrease, making China a more expensive country in future.

The Western companies currently investing in China could face a tremendous problem if China's currency, the Yuan (CNY) exchange regime changes to a floating exchange rate, reflecting the real value of the CNY. Western companies should rather balance their business by gaining market share in China to grasp the increase of the economy, and consequently, hedge their business risk if China reaches the point of economy stagnation or crises and as a result creates an unfavourable environment for sourcing commodities from China.

The decision to source commodities from China can not be solely based on the Chinese supplier's quote of total landed cost. China has influential factors with a cost attached to it that has an impact on the sourcing process and, eventually these costs should be taken into account in the landed cost of a sourced

commodity. Sourcing commodities from developing countries like China must be cost effective and must increase efficiency of a company that is procuring these commodities. In order to compare the actual landed cost of commodities in a strategic sourcing decision, Western companies must be aware of the high complexity of China's business ethics, market and the current resources available.

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Employees of DCCL:
Interviewees

Quality Specialist:
Chen Zahao
Ming Zhong
Qiang Zhao
Likai Sun
Jinghou Rong

General Manager Intellectual Property Rigths (IPR): Mayank Vaid
Human Resources (HR): Li He, Wang Bin
General manager Supply and Procurement North East Asia: Mitch Marecki
Supervisor: Senior Manager Global Procurement and Supply (GP&S) North East Asia: Bernd Fesenbeck
General Manager of human resources: Micheal Joerg Ivan
General Manager of quality: Raymond Blake
General Manager of quality and supply: Dr. Scott Stryker
General Manager of logistics: William Bill Cook.
General Manager of engineering: Ulrich Zillmann.

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Appendices

Appendix 1: Total cost per second supplier visit.

Expatriate engineers are involved in 1/3 of the supplier evaluations and local engineers conduct the rest.

Cost Description	**Cost**	**Total**
Return plane ticket (per person)	CNY 2 100	
Hotel (per person)	CNY 700	
Taxis	CNY 400	
Travel allowance for 2 days	CNY 440	
Total cost for 3 people		CNY 10 920
Source evaluations for 2005 (110)		**CNY 1 201 200**
Average salary per local buyer/engineer/quality specialist per day CNY 1 120		
Average salary per Expatriate engineer per day CNY 2 500		
Wages and cost to company of local buyer/engineer/quality specialist		**CNY 657 067**
Local Buyers and Quality Specialist (CNY 1120 x 2 days per visit x 110 supplier visits x 2 Buyer and Quality specialist)	CNY 492 800	
Local Engineer (CNY 1120 x (2/3) local engineers per supplier visits x 2 days per visit x 110 supplier visits in 2005.	CNY 164 267	
Wages of Expatriate Engineer		**CNY 545 933**
Expatriate Engineer (CNY 2 500 x (1/3) expatriate engineers per supplier visits x 2 days per visit x 110 supplier visits in 2005.	CNY 183 333	
Expatriate Cost to Company, see table 6.2.1.1.c (CNY 147 000 /30 days per month x (37 visits in 2005 x 2 days per visit)	CNY 362 600	
Total cost per second supplier visit for 2005		**CNY 2 404 200**

Appendix 2: Japan's economic trends.

Supporting data of figure 7.1.1. – Japan's economic trends.

Japan						
http://www.stat.go.jp/english/data/chouki/index.htm						
Year	**Exports (1000 Yen)**	**In billion USD**	**Change in export from year to year**	**Exchange rate Yen/USD**	**Percentage change in exchange rate**	**Percentage GDP per year**
1956	900 229 011	2.5		360.00		
1957	1 028 886 636	2.9	14.29%	360.00	0.00%	
1958	1 035 561 686	2.9	0.65%	360.00	0.00%	

1959	1 244 337 203	3.5	20.16%	360.00	0.00%	
1960	1 459 633 161	4.1	17.30%	360.00	0.00%	
1961	1 524 814 578	4.2	4.47%	360.00	0.00%	
1962	1 769 817 267	4.9	16.07%	360.00	0.00%	
1963	1 962 761 744	5.5	10.90%	360.00	0.00%	8.80%
1964	2 402 348 862	6.7	22.40%	360.00	0.00%	11.20%
1965	3 042 627 204	8.5	26.65%	360.00	0.00%	5.70%
1966	3 519 500 700	9.8	15.67%	360.00	0.00%	10.20%
1967	3 758 966 022	10.4	6.80%	360.00	0.00%	11.10%
1968	4 669 798 348	13.0	24.23%	360.00	0.00%	11.90%
1969	5 756 405 162	16.0	23.27%	360.00	0.00%	12.00%
1970	6 954 367 159	19.3	20.81%	360.00	0.00%	10.30%
1971	8 392 768 263	27.2	41.06%	308.00	-14.44%	4.40%
1972	8 806 072 248	28.6	4.92%	308.00	0.00%	8.40%
1973	10 031 426 859	32.6	13.91%	308.00	0.00%	8.00%
1974	16 207 879 577	52.6	61.57%	308.00	0.00%	-1.20%
1975	16 545 313 718	53.7	2.08%	308.00	0.00%	3.10%
1976	19 934 618 464	64.7	20.48%	308.00	0.00%	4.00%
1977	21 648 070 431	70.3	8.60%	308.00	0.00%	4.40%
1978	20 555 840 563	87.8	24.98%	234.00	-24.03%	5.30%
1979	22 531 538 859	109.4	24.51%	206.00	-11.97%	5.50%
1980	29 382 471 938	121.4	11.01%	242.00	17.48%	2.80%
1981	33 468 984 502	159.4	31.27%	210.00	-13.22%	2.80%
1982	34 432 500 947	147.8	-7.28%	233.00	10.95%	3.10%
1983	34 909 268 599	147.3	-0.33%	237.00	1.72%	2.30%
1984	40 325 293 701	174.6	18.51%	231.00	-2.53%	3.80%
1985	41 955 659 471	165.2	-5.38%	254.00	9.96%	4.40%
1986	35 289 713 887	190.8	15.48%	185.00	-27.17%	3.00%
1987	33 315 191 383	220.6	15.66%	151.00	-18.38%	4.50%
1988	33 939 183 158	267.2	21.12%	127.00	-15.89%	6.50%
1989	37 822 534 626	290.9	8.87%	130.00	2.36%	5.30%
1990	41 456 939 674	276.4	-5.01%	150.00	15.38%	5.20%
1991	42 359 892 974	313.8	13.53%	135.00	-10.00%	3.40%
1992	43 012 281 444	330.9	5.45%	130.00	-3.70%	1.00%
1993	40 202 448 725	340.7	2.97%	118.00	-9.23%	0.20%
1994	40 497 552 697	378.5	11.09%	107.00	-9.32%	1.90%
1995	41 530 895 121	446.6	17.99%	93.00	-13.08%	2.60%
1996	44 731 311 206	422.0	-5.50%	106.00	13.98%	1.40%
1997	50 937 991 859	424.5	0.59%	120.00	13.21%	-1.80%
1998	50 645 003 938	389.6	-8.22%	130.00	8.33%	-0.20%
1999	47 547 556 241	402.9	3.43%	118.00	-9.23%	2.90%
2000	51 654 197 760	487.3	20.94%	106.00	-10.17%	0.40%
2001	48 979 244 311	411.6	-15.54%	119.00	12.26%	0.10%
2002	52 108 955 735	400.8	-2.61%	130.00	9.24%	1.80%
2003	54 548 350 172	470.5	17.39%	115.93	-10.82%	2.30%

Appendix 3: China's economic trends.

Supporting data of figure 7.1.2. – China's economic trends.

China					
http://www.uschina.org/statistics/economy.html					
Year	**Exports (USD billions)**	**Change in export from year to year**	**Exchange rate CNY/USD**	**Percentage change in exchange rate**	**Percentage GDP per year**
1997	182.7		8		9.3%
1998	151.1	-17.30%	8.28	3.50%	7.8%
1999	182.7	20.91%	8.28	0.00%	7.6%
2000	183.8	0.60%	8.28	0.00%	8.4%
2001	194.9	6.04%	8.28	0.00%	8.3%
2002	325.6	67.06%	8.28	0.00%	9.1%
2003	438.2	34.58%	8.28	0.00%	10.0%
2004	593.3	35.39%	8.28	0.00%	10.1%
2005	762	28.43%	8.07	-2.54%	10.2%
2006	969.1	27.18%	7.8	-3.35%	10.7%

Interview questionnaires

Appendix 4: Michael Joerg Ivan: General Manager of human resources DCCL

(23 April 2007)

Management

1. Please specify a general expatriate's cost to company for DCCL?
2. What percentage of management in DCCL is Chinese and expatiates?
3. What are the average age of and the years of experience in a particular field of an expatriate?
4. In terms of productivity calculator is there any data or information that would indicate if the employees in DCCL's productivity is higher when working under an expatriate manager than a Chinese manager?

Employment loyalty and commitment

1. What is the turnover rate at DCCL for 2005 and 2006?
2. What is the general cost of training for an employee at DCCL?
3. What is the general recruitment cost of an entry-level manager?

Appendix 5: Mayank Vaid: General Manager of intellectual property rights DCCL.

(21 May 2007)

1. Please define counterfeit products in an automotive export context?
2. China's legal history is known for its controlled corruption. Though it is said that the national government appears to be sincere in the recognition/importance of protection IPR but the problems occur on ground level whereas enforcement must be executed? What is your option regarding this point of view?
3. From my understanding having read several articles about this topic, one of the problems are that counterfeit manufacturers negotiate a fixed amount of taxes paid to the local government based on graduated tax rates and in return it is directly linked with revenue. Do you think China will ever change in terms of ethical business procedure?
4. How does DCCL prevent counterfeits? Is it from a problem base or does DCCL actually raise barriers across the entire supply chain?
5. DCCL's design team is based in western countries; therefore the blueprints are basically patented in foreign countries. It is said that commonly accepted norms differ from foreign to Chinese areas. For example the Chinese law allows patents to be granted on the basis of utility a model and of design. Neither requires the detailed substantive examination that is generally regarded as the hallmark of patent application. When deciding we will source a commodity from China does DCCL patent our designs for that particular commodity in China as well?
6. Has DCCL experienced any problems in the past with counterfeit goods?
7. If so, has the dispute been settled in Chinese court and what is the procedure for a multi national company in such cases?
8. What is the impact of counterfeit goods to DCCL's sourcing business in China?
9. Is some commodities more vulnerable than others, if so, which?
10. Have you faced similar degree of counterfeit awareness in other countries and does DCCL also have similar departments in other countries?
11. What is the overall cost (estimation) for DCCL facing counterfeit risks?

Appendix 6: Ulrich Zillmann: General Manager of engineering DCCL

(21 May 2007)

1. How many engineers are in DCCL (Chinese/expatriate)?
2. Are you related with anything in terms of engineering in the global sourcing process?
3. Do the engineers spend any time with the commodity export suppliers?
4. What is the travel budget for question three?
5. What percentage of raw materials must be imported for the production of export commodities?
6. Changes to current commodities; do we have a design team in China? What is the procedure in such cases?
7. How often are there changes in the commodity's design?
8. Changes in commodity design, what is the effect on the approximate lead-time?
9. Automotive industry requires high degree of specialized manufacturing products/commodities. Plenty of these products need technology driven processes. When suppliers give us a sample of the particular goods, who oversee whether it is up on standard?
10. Assume that DCCL provides the supplier with patented patterns designs and for some good reason we decide not to use the supplier. Have you faced any problems with counterfeit products of such a supplier thereafter?
11. What is the toughest challenge you face in China regarding engineering and export?
12. What is your feeling about sourcing commodities from China?
13. Do you think companies often oversee the soft cost involved that is not calculated in the total landed cost?

Appendix 7: Scott Stryker: General Manager of supply quality DCCL.

(11 May 2007)

1. What is the main challenges DCCL face in terms of quality?
2. Describe the quality check process?
3. How often (per year) is there a defect in the quality of the shipment, if so, what are the consequences?
4. Do you have records on this, from 2005 till 2007?
5. What percentage of raw materials must be imported that is necessary for the production process?
6. Does DCCL invest any money into the supplier in terms of development?
7. If so, how much (estimate amount in total per year per commodity)?
8. If you could give a rough indication, what is the impact of the inconsistency of quality on top of the price of the major five commodities (referring to the above graph).
9. Chassis, electrical, exterior, interior and powertrain
10. Describe the training process given to employees in the quality department and the estimate training cost of it.
11. What are the biggest challenges when sourcing from China?
12. Do you think the economic growth in China is sustainable?
13. Were there any automotive commodities that DCCL wanted to source from Chine but could not, and what is the reason why not?
14. China is facing greenhouse pressure in terms of global warming and ozone friendly matters. Does DCCL enforce such preventions?
15. What degree of influence does the Chinese government has on DCCL's sourcing activities?
16. If there is a defect in the particular commodity sourced, how good is the Chinese supplier's cooperation to correct the defected shipment?
17. How is the quality of automotive export commodities controlled? Is there a DCCL quality employee doing a quality check at each supplier who does sanity checks before exporting?

Appendix 8: Quality specialist questionnaire

How many suppliers do you visit per month?

1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐

What is the approximate amount you spend per month on supplier's visits?

(Including hotel, fights, dinner etc)

_____

How long does it take to visit one supplier?

½ day ☐ 1 day ☐ 1 ½ day ☐ 2 days ☐ longer ☐(please specify ____)

Do you think the supplier quality visits are essential?

Yes ☐ No ☐

What are the main problems you face when visiting a supplier?

(Please indicate the degree impact of the factor using a scale where

1=no problem, 2=normal problem, 3=major problem)

Inconsistent quality	1 ☐	2 ☐	3 ☐
Reliability of supplier	1 ☐	2 ☐	3 ☐
Supplier attitude	1 ☐	2 ☐	3 ☐
Supplier's knowledge and experience	1 ☐	2 ☐	3 ☐
Supplier's commitment	1 ☐	2 ☐	3 ☐
Quality of the product	1 ☐	2 ☐	3 ☐
Supplier efficiency	1 ☐	2 ☐	3 ☐

Other: _____

Do you think the above have a negative impact on the quality of the product?

Yes ☐ No ☐

Please rank the commodities that face the biggest challenges in terms of quality.

(1=biggest challenges – 5=hardly any problems)

Chassis 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Powertrain 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Exterior 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Interior 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Electronic 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Do you think foreigners would be able to communicate effectively with suppliers, in terms of language?

Yes ☐ No ☐

How long did it take you from starting in the quality department to your first supplier visit on your own?

2 weeks ☐ 4 weeks ☐ 6 weeks ☐ 8 weeks ☐ 10 weeks ☐ other _____

Can you recall any shipment that has been cancelled because of its quality?

Yes ☐ No ☐

If yes, how many per year _____

What do you think is the most important thing when doing a quality check?

Additional comments?

Appendix 9: William A (Bill) Cook: General Manager of logistics DCCL.

(21 May 2007)

1. Why are DCCL using DDP and not FOB?
2. Who negotiate the shipment rates and that control do we have in terms of changing rates?
3. Who bears the cost if a shipment is not on time and needs to be airfreight?
4. Do you have statistics of the impact that it had on the delay of production?
5. What are the biggest challenges in China's logistics?
6. Estimation about the density of each commodity shipped and what size containers have been used (calculate the unoccupied cost)?
7. Is there any government intervention in outbound logistics?
8. In terms of trade policies, china is currently exporting in large numbers. If countries implement policies their infant industries and local productions, it will have a significant impact on our sourcing? What is your feeling about this? Does DCCL do anything in order to hedge the outcome?
9. What is your overall impression of China's logistics?

Appendix 10: Logistics team of DCCL

(15 May 2007)

1. What is the transportation cost for the main ports in China?
2. How often was commodities air freight instead of sea shipped because of time constraints and what was the main reason for this time constraints?
3. What are the biggest challenges in China's logistics system?
4. Is there any government intervention in the outbound logistics from China?
5. Does DCCL mix commodities per freight shipped?
6. What percentage of the commodities requires protective packaging?

Appendix 11: Prof Chienkuo Wu: Shanghai Maritime university (Shanghai)

Universidad de las Americas (Puebla, Mexico) a visiting professor in economics from Shanghai Maritime University (Shanghai)

(9 October 2007)

1. Do you think China is on the same path as Japan thirty year ago?
2. What similarities are there between China today and Japan in the 1980s?
3. The USA and most trading countries had a trade deficit with Japan which had a significant impact and maybe also a key reason for the stagnation followed in the early 90s, but, most countries are in the same position with China today. Could China's trade surplus be a major problem in its future growth and could it have such a significant impact as Japan's?
4. What is the difference in the supply chains of Japan in the economic miracle era and China today?
5. Do you think China's growth is sustainable? What makes China's economic growth different than Japan in the 1960-1980?